

AIR CONDITIONING & REFRIGERATION

The Newspaper of the Industry

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NEWS

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Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Story of the Week
Lone Star First
Exciting OEM Market
Service—the BIG
Problem
Boo boomed Beginnings
Reasons for Buying
Astonishing Growth
Not Just the Rich
Factory Installations
Clutch Ultra-Important
Air Conditioning for
Trucks and Cabs

Story of the Week

Ray Serfass, York's vice president and director of operations, read an editorial of ours to his engineering staff. In this one, as you may recall, it was suggested that the public wants a room air conditioner to be:

Inaudible
Inconspicuous
Inexpensive.
"Uh huh," muttered an engineer, "I get it—Inefficient."

Lone Star First

Jokes about Texas are legion; but what Texas has done for and about automotive air conditioning is no joke. It's fantastic, incredible, marvelous, wonderful.

In fact, without brave and brash Texas pioneers there might be no automotive air conditioning industry as it exists today. At least, it wouldn't have come of age so soon.

Down there it's gawdamighty hot, and cool transportation is desired by all citizens of that splurging region.

Hence, independent manufacturers of auto coolers have flourished in the Lone Star State. Stole a march on giants Ford, Chrysler, and General Motors, they did.

Three reasons why the latter may seem to have been asleep at the switch until recently:

(1) Michigan, where the automobile "brass" live, self-advertises that it is the Naturally Air Conditioned Summer Playground of America. True, too. Unlike Texas, Louisiana, Oklahoma, Arkansas, Arizona, etc., air conditioning isn't a MUST in the near-Canada state where automotive executives reside. Relatively few days in Michigan register temperatures in the high nineties.

(2) General Motors, Chrysler, and American Motors have had experience with refrigeration in subsidiary divisions. Analyzers in those corporations knew that consumers were accustomed to trouble-free refrigerators and

(Continued on Page 8, Col. 1)

Auto Cooling Installations 'Surprise' Mfrs.

By Robert E. Lacey

DETROIT—When they viewed figures of the number of auto air conditioners which had been factory-installed during the 1957 model year, motor manufacturers were pleasantly surprised.

Cadillac Div., General Motors Corp.—Releasing figures for what is believed to be the first time, Cadillac installed 46,476 auto air conditioners at the factory in approximately 31% of the total 146,840 year's production. This was reported to be up considerably from the estimated 38,000 air conditioners installed during the preceding model year.

Oldsmobile Div., GMC—Air conditioning units were reportedly installed in 10.2% of the approximately 389,350 cars produced in the 1957 model year. This totaled 38,933 car coolers, an increase over the estimated 35,000 put in during the preceding year. Production in the com-

(Concluded on Page 37, Col. 3)

King-Seeley Buys Queen

ALBERT LEA, Minn.—A. N. Gustine, president of King-Seeley Corp. of Ann Arbor, Mich., and F. A. Trow, president of Queen Products, Inc. here, announced that arrangements had been concluded for the purchase by King-Seeley of Queen Products and its associated company, the Albert Lea Building Corp., both situated here.

Queen Products was formerly known as Queen Stove Works, Inc. The change in name was made prior to the company's acquisition by King-Seeley, it was reported. Queen Products' American Gas Machine Co. division makes "Scotsman" ice machines and other products.

Gustine said King-Seeley had arranged to borrow \$5 million from three banks and an insur-

(Concluded on Page 14, Col. 5)

Expect 15,000 To Jam Chicago Amphitheatre To View Biggest Cooling, Refrigeration Show

Still Time To Plan To Attend

If you are active in the air conditioning and refrigeration industry, and haven't made plans as yet to attend the 10th Exposition of the Air Conditioning and Refrigeration Industry, Nov. 18-21 at the International Amphitheatre in Chicago, you still have plenty of time to do so.

There are plenty of hotel accommodations still available in Chicago during that period, but if you wish some assistance on this score, get in touch with the Housing Bureau, 10th Exposition of the Air Conditioning and Refrigeration Industry, 134 N. LaSalle St., Chicago.

Why is it important for you to take some time out from your busy days to visit the Exposition? The main answer to this, of course, is that it provides in one compact package a quick look at all the new product developments—something that would require a much greater investment in time and money if the individual tried to do it other than at the Show.

Furthermore, it provides an opportunity to discuss products and problems with engineers and executives of the manufacturing companies, and to exchange ideas with those in similar lines of business. Many of the technical sessions of the various industry associations meeting in Chicago during the Exposition are open to all who are interested, and this offers further opportunity to gather useful information.

The Exposition offers you a rare chance to better your business opportunities. Don't let it slide away from you.

Whole Industry To Be Represented Nov. 18

CHICAGO—The International Amphitheatre here will be jammed with thousands of representatives of all branches of the air conditioning and refrigeration industry starting next Monday, Nov. 18, when the 10th Exposition of the Air Conditioning and Refrigeration Industry opens here for a four-day run.

More than 15,000 visitors are expected at the Exposition, according to R. H. Israel, chairman of the Exposition Committee of the Air-Conditioning & Refrigeration Institute, which sponsors the Show.

The 10th ARI Exposition is open to anyone who has any interest in the refrigeration and air conditioning industry, selling, buying, installing, servicing,

News Will Distribute '58 Directory at Show

AIR CONDITIONING & REFRIGERATION NEWS will occupy exhibit space 517 at the 10th Exposition at Chicago.

Copies of the 1958 Air Conditioning and Refrigeration Directory containing 376 pages of classified listings of all types of products made by the industry and used in application of the industry's products, will be distributed to those attending the Exposition. Copies of the big Nov. 18 Special Show Issue will also be distributed on a "first come, first served" basis while the supply lasts.

or designing the industry's products. Registration will be carried out at the door of the Auditorium. There is no admission charge.

The Exposition will be open the following hours:

Monday, 2 to 10 p.m.
Tuesday, 10 a.m. to 6 p.m.
Wednesday, 10 a.m. to 6 p.m.
Thursday, 10 a.m. to 4 p.m.
Eight major industry associations (Concluded on Page 17, Col. 1)

York Promotes 4 In Marketing Div.

YORK, Pa.—Appointments of three product general sales managers and an assistant vice president of marketing were announced recently by York Corp., subsidiary of Borg-Warner Corp.

Robert G. Werden was named appointed general sales manager of packaged products, according to Austin Rising, vice president and director of marketing.

Robert G. Werden was named general sales manager of engineered equipment, Rising continued.

Walter L. Pharo was upped to general sales manager of con-

(Concluded on Page 4, Col. 5)

Carrier Develops Residential Gas Absorption Conditioner

SYRACUSE, N. Y.—Carrier Corp. has developed a gas-fired air conditioner, operating on the absorption principle, for home use, the company announced recently.

Lyle C. Harvey, senior vice president of Carrier Corp., said that the air-cooled, gas-fired air conditioner has been tested for a season and will undergo further exhaustive performance studies during the coming year.

Harvey is former president of Affiliated Gas Equipment, Inc., which was merged into Carrier in 1955.

Harvey said Carrier's objective is to produce lower-cost equipment for residences which will be more competitive with other types of central air conditioners.

The unit is designed for installation with gas-fired heating

systems, converting them to year-round use.

The cooling apparatus itself (Concluded on Page 17, Col. 1)

Typhoon Names Gilbreath V.P.

BROOKLYN—John A. Gilbreath has been appointed vice president of sales for Typhoon Air Conditioning Co., succeeding Mark E. Mooney, it was announced by Don V. Petrone, president of the Hupp Corp. division.

Mooney has resigned from the Typhoon staff at Brooklyn to join Advance Appliance Co. in Tampa, Fla., as a partner.

Gilbreath brings with him 23 years' experience in the air conditioning field. He was associated with Nash-Kelvinator Corp. (Concluded on Page 17, Col. 5)

Haverly To Move Mfg. To Royersford, Pa.

SYRACUSE, N. Y.—Haverly Equipment Div., John Wood Co., announced that its manufacturing operation will be moved to Royersford, Pa. on Jan. 1.

The move will more than triple Haverly's production of refrigerated bulk milk coolers, it was stated.

A branch sales office as well as warehouse and service fa-

(Concluded on Page 17, Col. 2)

Read and Profit

SERVICE is at once the most important, and most underrated, feature of our business. (Just ask any housewife or homeowner.) There's an editorial about that crucial subject on page 18, and useful articles reporting progress in the design of original equipment, replacement equipment, and servicing procedures beginning on page 20.

In this third and final "preview issue" for the 10th Exposition of the Air Conditioning and Refrigeration Industry, brief descriptions of items which will be exhibited by parts and supplies manufacturers are presented on page 10, with continuations.

These previews serve not only as a handy guide for those who are planning their trips around Chicago's International Amphitheatre, but also should be useful to stay-at-home readers. They may desire to make further investigations of these interesting new products.

"Inside Dope" this week is devoted entirely to a comprehensive, painstakingly researched study of automotive air conditioning—most exciting Sputnik in our industry's universe. Again, SERVICE appears to be the key. From page one, this original research proceeds to inside pages 8, 9, and 10.

Make Your **FIRST CHOICE**

READING COPPER TUBING

Made by
Copper Tube SPECIALISTS



SECOND to NONE

for Refrigeration &
Air Conditioning Equipment

READING TUBE CORPORATION

EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Brass Mills Raise Base Prices for Copper and Copper Base Alloys

NEW YORK CITY—Effective Nov. 4, Revere Copper & Brass, Inc. announced it increased its base prices for copper and copper base alloys by a cent a pound with extras upped by 10 percentage points for an average increase of 2½%.

Other brass mills, including Chase Brass & Copper Co., Western Brass Mills Div., Olin Mathieson Chemical Co., and American Brass Co. quickly followed suit, also effective Nov. 4.

This move, the brass mills said, was made necessary by increases in cost of labor, salaries, transportation, and supplies incurred during the last year.

Preceding that price rise, the big Belgian Congo copper producer, Union Minière du Haut

Katanga, boosted its price of copper by 0.65 cent a pound to 23.80 cents at New York and Antwerp. It was the first change by Katanga since Oct. 24 when it cut the price by 0.45 cent to 23.51 cents a pound, lowest price in several years, it was pointed out.

Robert Grove Named Sales Vice President At Victor Products

HAGERSTOWN, Md.—Robert B. Grove has been named vice president-sales of Victor Products Corp. here, R. J. Funkhouser, chairman of the board, announced.

Grove will be in charge of marketing the full line of refrigeration equipment and post-mix and pre-mix coin and manually operated beverage dispensing machines made in the Hagerstown and Ranson and Berkeley Springs, W. Va. factories.

He has been vice president-sales for O'Sullivan Rubber Co.

York Will Make Hotpoint Air Conditioners for '58

CHICAGO — Confirmation that York Corp., subsidiary of Borg-Warner Corp., would make its 1958 air conditioning line has been given by Hotpoint Co. here.

Previously O. A. Sutton Corp. was supplier of room air conditioners for Hotpoint.

Chicago Seal Is Division Of Northwest Products

CHICAGO—George B. Dardwin and Joseph M. Stella announce the acquisition of Chicago Seal Co., long-time manufacturer of replacement valve plates and shaft seals for commercial refrigeration compressors.

The company will be operated under the name of Chicago Valve Plate & Seal Co., as a division of Northwest Products Co., Chicago.

Dardwin and Stella bring to the management of Chicago Valve Plate & Seal Co. many years of engineering, manufacturing, and service experience in the field of commercial refrigeration, it was further pointed out.

Plans for the future include a complete line of replacement valve plates for the up-to-date semi-sealed commercial units, according to the firm's announcement.

KRAMER PRODUCTS

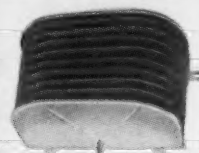
Have earned an unsurpassed reputation for leadership and dependability that makes it easy for wholesalers and contractors to grow and prosper.

Designed and engineered to the highest standards, users of KRAMER products stay sold. Pictured are a few of the many KRAMER products—each a standard of the industry.

KRAMER TRENTON CO. • Trenton 5, N.J.

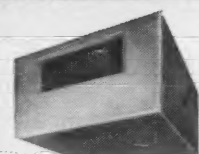
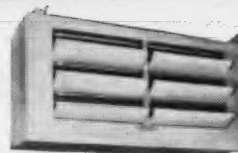
44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

WEDGE UNIT
4 models
1,000 to 6,000
BTU'S Per Hour



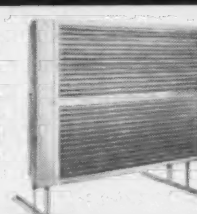
CUB CURVETTE
3 models
800 to 4,000
BTU'S Per Hour

COOLMASTER
14 models
2,500 to 160,000
BTU'S Per Hour



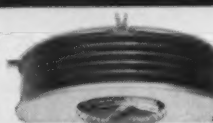
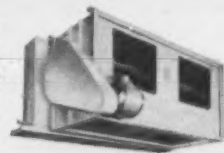
AIR CONDITIONING
UNIT
3 to 10 Ton

UNICON for Unlimited
Tonnage; any size compressor can use this remote air-cooled condenser. Minimum head pressure maintained by patented Winterstat.



COIL AND BAFFLES
15 Stock Sizes

THERMOBANK automatic re-evaporator hot gas defrost systems. There is a THERMOBANK for every application from 36° to minus 75°.



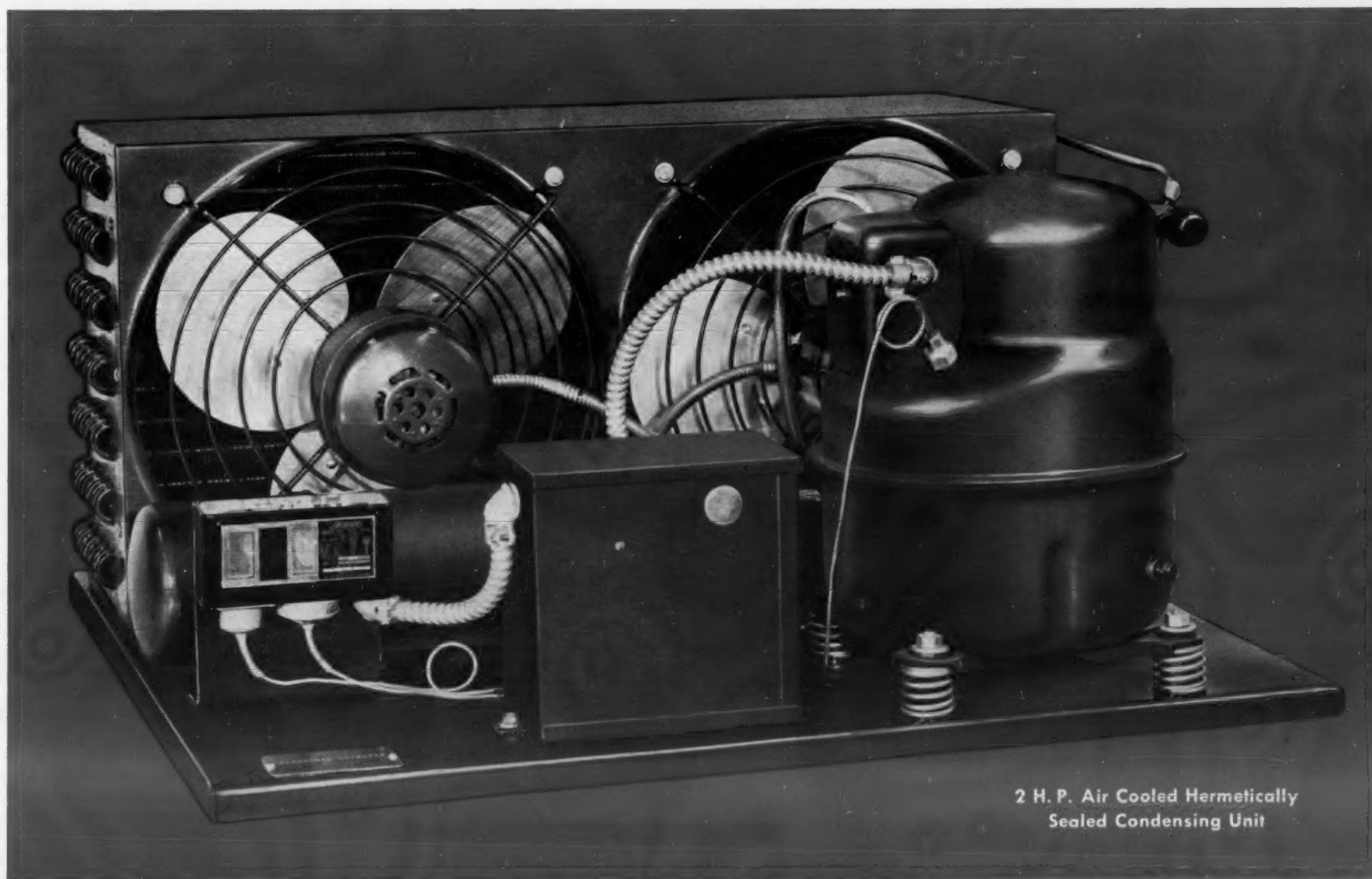
LARGE CURVETTE
7 models
3,500 to 30,000
BTU'S Per Hour



DRYAS
Molecular Sieve
FILTER-DRIERS
VISIT BOOTH 727 - CHICAGO SHOW
TUBE MANIFOLD CORP., N. TONAWANDA, N. Y.

*to
serve
you
better!*

LARGER SEALED UNITS THROUGH 2 H.P. FROM KELVINATOR



2 H. P. Air Cooled Hermetically
Sealed Condensing Unit

**SEE THEM AT THE ALL-INDUSTRY SHOW
NOVEMBER 18-21 SPACE 453**

See these new sealed units and other Kelvinator commercial refrigeration products. Kelvinator offers you one dependable source of low temperature equipment for almost every application.

Kelvinator

Division of American Motors Corp.

In Canada: Kelvinator of Canada, Ltd., Toronto 15, Ontario

American Motors Means



More For Americans

SPECIALISTS IN REFRIGERATION SINCE 1914

NAPRE Convention Will Feature Simultaneous Sessions To Give Members Wider Choice At Nov. 18-21 Meeting

CHICAGO — Tentative program for the 48th convention of the National Association of Practical Refrigerating Engineers has been announced by Nicholas Downs, convention chairman.

The convention will be held in the Del Prado hotel on South Hyde Park at 53rd St., Nov. 18 to 21. Some conventioners will be housed in the nearby Sherry hotel.

All educational sessions will be held in the mornings so that members can attend the 10th Exposition of the Air Conditioning and Refrigeration Industry in the afternoons.

An extra feature this year will be two sessions running at the same time, so members can pick subjects of more interest

to them, the group stated. A wide variety of field trips to outstanding refrigeration installations in Chicago will be part of the convention activities. Trips are scheduled to Illinois Bell Telephone Co., Continental Freezers, Albert J. Swill Co., Merchandise Mart, St. Peters Church, and the Prudential building.

Program schedule is as follows:

MONDAY, NOV. 18

9:30 a.m.—Business Session. Welcome by Carl A. Schroeder, postmaster of Chicago.
10:30 a.m.—Educational Session. "Food Preservation." Chapter 13. Basic Refrigeration by Guy R. King, NAPRE educational vice chairman.
11 a.m.—"Proper Refrigeration Increases Meat Profit" by Dan Wile, Recold Corp.
7:30 p.m.—Informal Party.

TUESDAY, NOV. 19

9:30 a.m.—Educational Session. "Trouble Shooting on Refrigerant Flow Controls" by William H. Krack, Sporlan Valve Co.
"Multi-Staging of Refrigeration Systems" by Will F. Stoecker, assistant professor of refrigeration, University of Illinois.
"Water Conservation Measures" by John Engalitcheff, Jr., Baltimore Air-Cool Co., Inc.

WEDNESDAY, NOV. 20

7:30 a.m.—Breakfast Session.
9:30 a.m.—Educational Session. "Industrial Insulation of Piping Pressure Vessels" by Dean Emerson, Jr., MMM, Inc.
"Refrigeration and Air Conditioning Applications in the Pharmacal Plant—Water Problems" by Paul V. Northam, Miles Laboratories.
"Ammonia Recirculation and its Application to the Small Meat Freezing Plant" by Joseph Greenspan, Frigidmeats, Inc.
"Controls for the Modern Industrial Heat Pump Installation" by Howard A. Wolfberg, York Corp.

THURSDAY, NOV. 21

9:30 a.m.—Educational Session. "Application of Centrifugals to Industrial Ice Manufacturing" by Robert F. McKee, Pacific Fruit Express Co.
Special presentation of results of a recent survey (subject unannounced) by Harold P. Hayes, NAPRE educational chairman.
11 a.m.—Business Session.
6:30 p.m.—New officers reception.
7:30 p.m.—Annual dinner.

Cross-Country Luxury Bus by Mack To Be Air Conditioned

CHICAGO — A modern feature of Mack Trucks, Inc.'s first new cross-country luxury bus is air conditioning.

Developed for competition in the cross-country market, the new 41-passenger vehicle will also have "Airlide" suspension, foam rubber reclining seats, and individually-controlled reading lamps. The diesel-powered bus will be produced at the company's Sidney, Ohio factory.



M. S. LEBAIR



R. E. CASSATT



W. L. PHARO



R. G. WERDEN

York Names --

(Concluded from Page 1, Col. 5) tract products.

M. S. LeBair has been named assistant vice president of marketing.

In his new position, Cassatt will supervise sale of York room air conditioners, residential heating and air conditioning equipment, packaged ice making units, refrigeration products, and commercial self-contained air conditioners.

Werden, with headquarters here, will direct the sale of all engineered York air conditioning and refrigeration equipment in this country.

Pharo's new assignment makes him responsible for all sales activities of the new Contract Products division, involving a number of special products not directly related to the air conditioning and refrigeration industry, Rising explained.

In his new post, LeBair will act as staff assistant to Rising in all areas of the marketing program, with specific emphasis on trade relations, it was pointed out.

Cassatt joined York as sales manager of the Commercial Div. in 1955 after previously serving as advertising manager and general sales manager for the Refrigeration Appliance Div. Fedders-Quigan Corp.

With York for 20 years, Werden has served as sales engineer, sales manager of middle Atlantic district, and manager of the north Atlantic district.

Pharo joined the firm in 1935 as a student engineer. He was a sales engineer until 1942 when he entered military service. Pharo returned to York as sales personnel manager, and prior to his recent promotion was sales manager of the Industrial Div.

LeBair started with York in 1917 as a draftsman. Moving into sales, he was subsequently named sales manager of the Philadelphia office. Later he became branch manager there and in 1936 was made middle Atlantic district manager.

Texas Air Conditioning Holds Up Into Fall

HOUSTON, Texas — Though the cool weather of fall has come to stay, there's no shortage of air conditioning projects for contractors and suppliers.

Eighteen of 34 projects reported by the Chamber of Commerce for additions, alterations, repairs, and air conditioning of manufacturing and commercial buildings called for air conditioning work.



design for utility



WE MAKE THEM ANY LENGTH...

VIKING utilizes the most advanced drawing and handling equipment known to the industry to deliver continuous coils of precision drawn copper tube in any desired length up to 2,000 feet . . . the type of coils supplied for specific design to suit customer requirements — reel type — helical — layer — bunch.

Annealing is done in controlled atmosphere electric furnaces of the latest design to give the required grain size within close tolerances, enabling the tube to be formed, flared, or expanded readily without danger of fracturing or splitting.

As coil specialists, VIKING is gaining the preference of more and more of America's leading manufacturers of refrigeration and air conditioning units and coils.

Visit BOOTH NO. 312 10th EXPOSITION Air Conditioning and Refrigeration Industry NOV. 18 TO NOV. 21 • CHICAGO, ILL.



VIKING COPPER TUBE CO.

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER TUBE

EXTRA WORKABILITY

The proper kind of temper is vital in tube used for refrigeration and air conditioning purposes. VIKING Copper Tube has been produced with the best available annealing and tempering equipment, thus assuring perfect fabricating.

ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.



THE CUSTOMER SERVICE THAT WAS 375 MILES LONG

Not too long ago, the manufacturer of a new bulk milk cooler was experimenting with design changes aimed at lowering his unit price.

We at Bendix-Westinghouse heard about the problem and offered the services of one of our field men who knew refrigerating engineering and who had a lot of experience in the dairy field. Our offer was promptly accepted, and—because our manufacturer friend had a big order in the balance

—a “rush” tag was placed on the assignment. At the time, our field man was 375 miles away from the manufacturer’s city. But, by driving all night, he was there the next morning. By the end of the day he had made some design suggestions that resulted in a better product at lower cost. Happy ending: The manufacturer got his milk cooler order—and Bendix-Westinghouse got a nice compressor order, too.

Such willingness—and ability—is, we’re proud to say, a trait that extends from top to bottom in our organization. We’ve got the darndest people you ever saw when it comes to practicing the philosophy that “what’s good for the customer (or prospect) is good for us, too”.

If that kind of spirit—plus compressor quality that takes a back seat to no others—appeals to you, we have a suggestion to make. Get our story.

Bendix-Westinghouse

EVANSVILLE, IND.

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio—Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.



For more information about products advertised on this page use Information Center, page 22.

'58 Gibson Refrigerators, Freezers Feature 'Trimline' Built-In Styling

NEW ORLEANS — Seven high-styled refrigerators—including an all-new "Trimline" series—and six food freezers with Trimline styling for 1958 were unveiled by Gibson Refrigerator Co. to 500 distributors gathered here recently.

The 1958 line results from a complete new tooling program designed to give Gibson Trimline refrigerators the look of built-in appliances, according to A. J. Grewe, manager of refrigerator sales.

Shoulder-Type Hinge Eliminates Need for Door Clearance

Particular emphasis was concentrated on developing a new shoulder type hinge which eliminates need for door clearance. Even when the refrigerator is fitted tight into a corner, the door can swing a full 90°, he said.

At the distributor conference, Gibson also introduced its lines of commercial, residential, and room air conditioners, including heat pumps, and a new dehumidifier. These products were described in the Nov. 4 issue of the NEWS.

The new Gibson Trimline refrigerator series has only three components common to last year's refrigerators, Grewe said. They are compressor, ice cube tray, and interior light bulb.

A new 10-cu. ft. "Space-Saver" model for homeowners who like the contour corner appearance, is also offered.

Two 2-door models with freezer capacities of 100 and 250 lbs. are included in the '58 line. The line offers 10, 12, 14, and 18-cu. ft. sizes with left and right-hand doors.

'Eas-E-Open' Latch Opens from Inside

New "Eas-E-Open" latch—a simple single spring mechanism with nylon striker, which allows the door to be opened easily from the inside—is standard on all refrigerators and freezers, including the two-door models.

Chrome door handle, pale peach door panel, and charcoal gray trim are utilized along with all-porcelain liners.

All Trimline models are built to the same width (29 $\frac{7}{8}$ in.) and depth (25 in. not including door dimensions) with cabinet designed to fit flush with standard 25-in. kitchen cabinets. Strip moulding and grill are available for use in built-in kitchens.

For families with freezers, Gibson offers a 10-cu. ft. "Market Master" refrigerator. It is called the 118 *Cycle-Defrost*, which eliminates the freezer compartment, thus increasing the interior to 10.52-cu. ft. gross capacity for fresh food storage. It features Gibson's new "Cycle Defrost with automatic water disposer."

Similar in appearance but with a 43-lb. capacity full-width freezer locker plus a 13.4-lb. freshener locker is the 110 *Dial-O-Matic* model. The 10.52-cu. ft. gross capacity unit has "Dial-O-Matic" defrost.

Four models in the Trimline series include a 12-cu. ft. spe-

cial, two 14-cu. ft. units, and a two-door model.

The 122 *Dial-O-Matic* model is only 56 in. high with gross capacity of 11.92 cu. ft. The interior offers a freezer locker capacity of 50 lbs. plus a freshener locker capacity of 19 lbs.

The 140 *Dial-O-Matic* has gross capacity of 14 cu. ft. in a 63-in. high cabinet. Freezer locker has 75-lb. capacity and freshener locker holds 19 lbs.

A new engineering development incorporated in the unit is a winter-summer control baffle mounted at the rear of the freshener locker for improved interior circulation according to season.

Top single-door refrigerator-freezer model in the 1958 line

is the 148 *Cycle-Defrost* with squared "picture frame" chrome trim band on cabinet exterior. In the 75-lb. freezer is an ice storage chest, ejector mechanism with pink ice cube trays, and outside defrosting disposal with the automatic defrosting system.

Top of the Trimline series is the 158 *Cycle-Defrost* two-door refrigerator-freezer with 14 cu. ft. gross capacity. Freezer section contains 100 lbs. of freezer capacity—nearly 3 cu. ft. of storage space. Standard equipment is the ice bucket and cube ejector tray, outside disposal of defrost water, and automatic cycle defrost system.

An all-new, two-door refrigerator-freezer for 1958 is the 190 *Combo* which offers Trimline appearance in a 66-in. high cabinet providing 11.62 cu. ft. gross capacity in the top refrigerator section.

Fresh food compartment has

35-qt. full-width crisper with a separate temperature-humidity control system to keep fresh food flavorful even when left uncovered. Automatic defrost system and large bin at waist height are other features.

The 7-cu. ft. gross capacity freezer section offers storage for nearly 250 lbs. of frozen food, with cooling system completely separate from that of the fresh food compartment to provide below-zero even temperature. Four ice cube trays are located in top shelf.

Two of Gibson's new upright freezers incorporate a zero-degree temperature plate called "Freez-Flo" on every shelf, in addition to side wall plates. One series of coils is arranged to cross the freezer at each shelf, giving more freezing surface at less cost, it was explained.

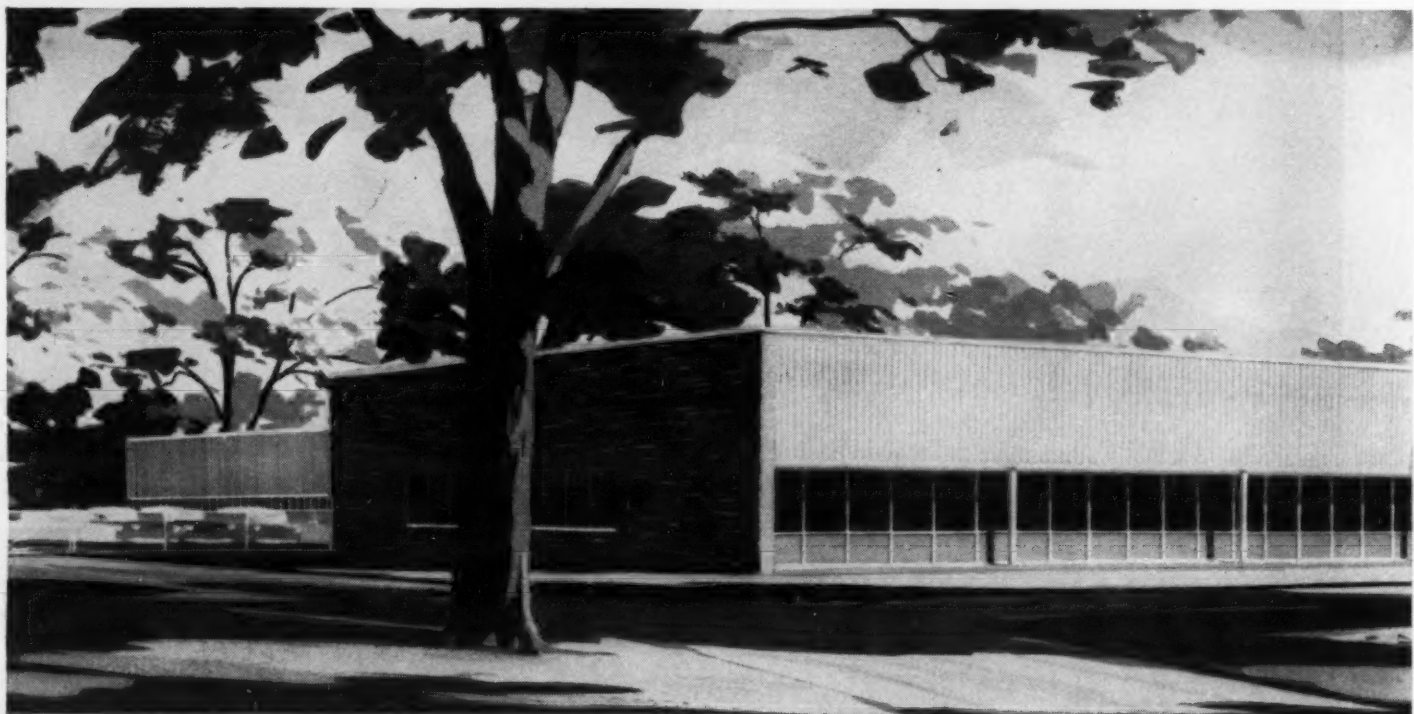
All models carry automatic food insurance for three years. Model GU-111DO has 11 cu.



GIBSON'S new Trimline two-door refrigerator-freezer.

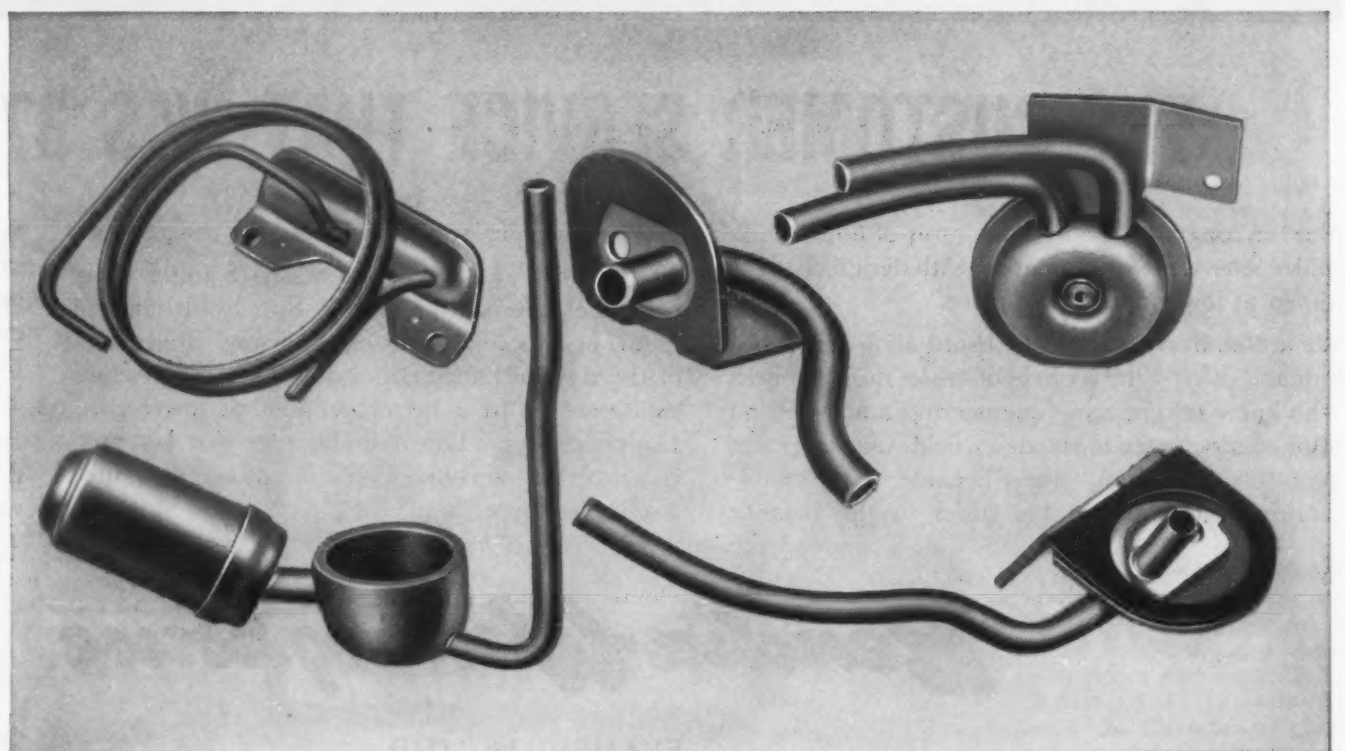
ft. of storage space and holds up to 355 lbs. It has four Freez-Flo shelves and five shelves in the door, each with a convenient lift bar. Aluminum strip on the front of shelves is raised to hold packages securely.

Available with right or left-hand door, the Gibson freezer is (Concluded on next page)



To satisfy your demand for fabricated parts:

Bundy Tubing



Bundy's new Winchester Division produces a wide variety of tubing shapes from strong, leak-proof Bundyweld for typical refrigeration parts

like these. Double-walled from a single steel strip, Bundyweld Tubing has become the safety standard of the refrigeration industry.

Gibson Refrigerators, Freezers - -

(Concluded from preceding page)

Model GU-201DO holds up to 664 lbs. of frozen food in over 19 cu. ft. of space and 21.6 sq. ft. of shelves. It has all-around freezer surface and two sliding baskets at the bottom, each with a 40-lb. capacity.

Cabinet height of both chest freezers is only 33½ in., depth 27¾ in. Both freezers incorporate fast freezing compartments and movable baskets. When the lid is closed, the handle locks to prevent its slipping open—although it's readily opened from the inside. Aluminum interiors provide rapid heat exchange.

Model GU-161DO provides up to 540 lbs. storage, with nearly 18 sq. ft. of shelf area and 16 cu. ft. of space. Two of its four shelves and the entire top, bottom, and side are refrigerated.

The door contains five package racks with a sliding shelf bar. Lift the bar and all shelves are open; lower it and all are locked in place. The door also has a juice dispenser rack and a key lock.

Model CF-21 C, storing up to 752 lbs. in 21 cu. ft., has the Gibson "Guardian" light which signals red if the freezer fails.

Model CF-17 C has a capacity of 568 lbs. in a storage space of more than 16 cu. ft.

ARW To Feature 'Magic of America' Talk, Panel Discussion on 'What Can Happen To You In Business' at Nov. 17-18 Confab

COLUMBUS, Ohio—The Air-Conditioning & Refrigeration Wholesalers announce the program for their 1957 annual meeting to be held at the Morrison hotel, Chicago, Nov. 17 and 18.

"The Magic of America" a talk by Cliff Titus, supervisor of executive development, Beech Aircraft Corp., will highlight the "Kickoff Luncheon" in the Cotillion Room at noon, Sunday, Nov. 17.

Something new has been added to the wholesaler's Banquet program Sunday night . . . entertainment which will feature the team of Bob James and Barney Richards, Chicago showmen.

On Monday morning, "Look

What Can happen To Your Business," a panel discussion by wholesalers with John P. Glass, Chase Supply Co., Chicago, acting as moderator, will feature panelists Peter H. Askew, Thermal Products, Inc., Los Angeles; Paul D. Cato, Texas Refrigeration Supply Co., Fort Worth, Texas; and Nedford K. Mason, Mason Supply Co., Columbus.

Gerry Kinnally, James B. Clow & Sons, Chicago, will speak on "Merchandising" and will join the panelists for the discussion period which follows.

The complete program for the 1957 ARW annual meeting follows:

THURSDAY, NOV. 14

9 a.m. — Manufacturer's relations committee meeting.
8:30 p.m. — Finance committee meeting.

FRIDAY, NOV. 15

9 a.m. — Board of directors meeting—Suite 440.
12:30 p.m. — Board of directors luncheon.
2 p.m. — Board of directors meeting (cont'd.).
6:30 p.m. — Directors dinner with members of ARW Region Six.

SATURDAY, NOV. 16

9 a.m. — Board of directors meeting (cont'd.).
1 p.m. — Registration.
7 p.m. — Past president's dinner.

SUNDAY, NOV. 17

10 a.m. — Registration.
12 noon — "Kickoff" Luncheon—Cotillion Room.
2 p.m. — Annual business meeting—Cotillion Room.
5 p.m. — Adjourn.
5:15 p.m. — Meeting—1958 board of directors.
6:30 p.m. — Officer's reception—Parlors B-C-D.
7:30 p.m. — Annual banquet—Grand Ballroom.

MONDAY, NOV. 18

8 a.m. — Registration.
9 a.m. — Wholesaler's meeting—Cotillion Room. "Look What Can Happen to Your Business." "Merchandising." "Discussion."
12 noon — Adjourn.

Plant Expansion Move

British Firm Adds Automatic Conveyor

BOGNOR REGIS, Eng.—Lec Refrigeration Ltd. here has recently installed its first automatic moving conveyor system as part of plans for doubling its production capacity.

The company announced that it has also installed a new press, weighing some 55 tons to stamp doors and other refrigerator cabinet sections by a pressure of 300 tons.

Another move to speed production was the resiting of a large oven in which food storage compartments move on an automatic conveyor system during the course of stove enamelling. Another oven has been extended and a large degreasing tank resited.

Urgency of the expansion moves was pointed up when the company recently received a \$650,000 order for compressors from a Canadian firm.

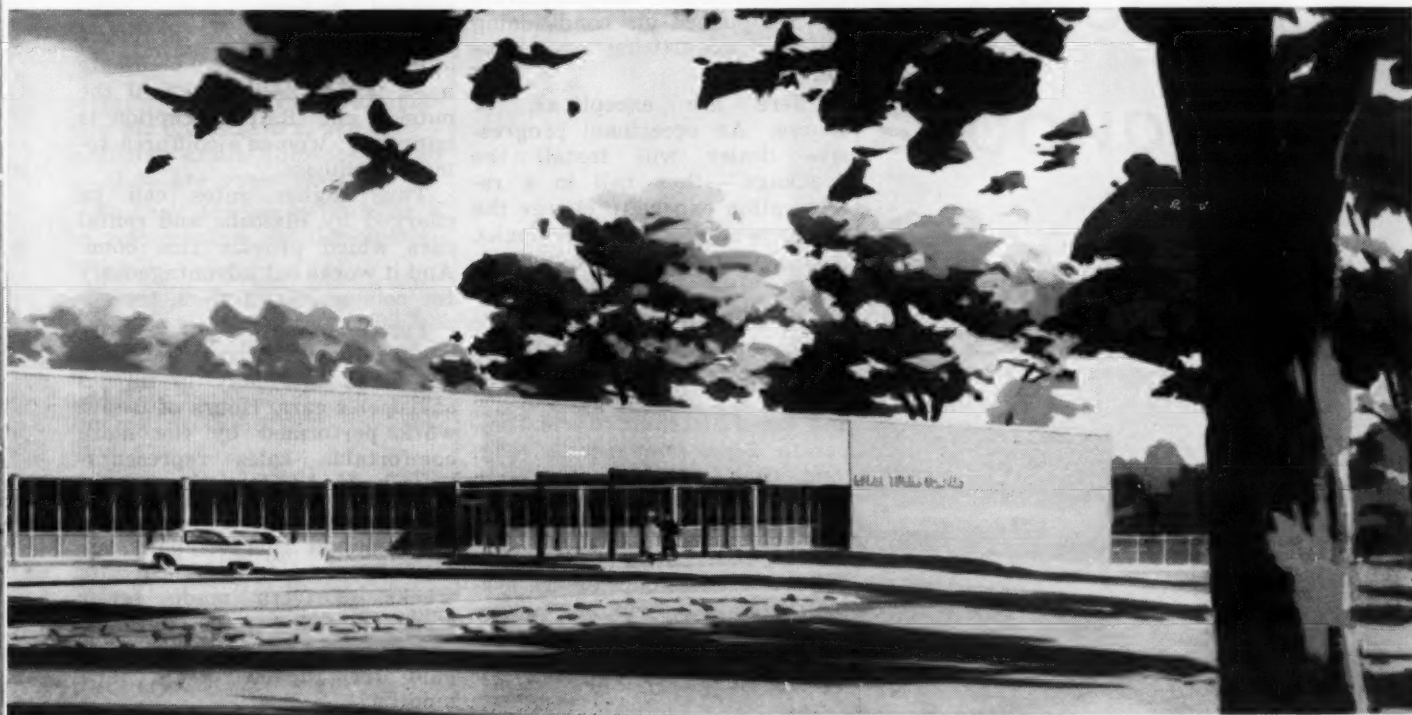
G-E Claims Weight, Size Reductions In 2 Pole Hermetic Motor Parts

SCHENECTADY, N. Y. — Weight reductions as high as 35% and size reductions up to 30% are claimed in the complete line of two-pole high-speed hermetic motor parts manufactured by General Electric Co. for refrigerator and air conditioning compressor applications.

"High-speed action, along with increased horsepower and reduced size and weight, allow compressor manufacturers to increase B.t.u. capacity or to reduce compressor size while maintaining the same B.t.u. capacity," G-E said.

"Weight reduction of ¼-hp. sizes is 35% with length decreased by 30%. In 1 and 1½-hp. sizes, weight is reduced 30% and length 25%. In 10-hp. sizes, there is a 20% weight savings and a 25% decrease in length."

The new two-pole motor parts are available from ½ hp. to 20 hp. in outside diameters of 4.8, 5.5, 6.3, 7.5, and 8.8 in.



Winchester Division, Bundy Tubing Company's newest plant, has 103,500 square feet of floor space devoted exclusively to fabricating parts from famous Bundyweld® Tubing.

expands again

New Winchester Division devotes 103,500 sq. ft. of floor space to high-speed, precision manufacture of parts from Bundyweld!

Bundy's new air-conditioned fabrication plant in Winchester, Ky., is open. And its every square inch has been planned, tooled and staffed to give you famous Bundy® precision and high quality in fabricated tubing parts . . . at low, mass-production costs.

Winchester Division now offers you all these:

Modern equipment—New machines fabricate tubing parts quickly, precisely, economically.

Experienced personnel—Highly trained production operators . . . long-time Bundy men in key supervisory slots.

Tight quality-control—Rigid inspection holds your specifications exactly . . . maintains your quality standards.

On-time deliveries—Modern equipment insures efficient handling, prompt shipment. Plant is strategically located . . . easy to reach by truck from major highways.

Winchester Division joins Bundy's other production and fabrication plants to give you low-cost, blueprint-to-assembly service on whatever you need in small-diameter tubing or fabricated tubing parts. Find out how you profit from Bundy's growth. Call, write, or wire us today.

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WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, ENGLAND, FRANCE, GERMANY, AND ITALY

There's no real substitute for

BUNDYWELD® TUBING

Bundy Tubing Distributors and Representatives: **Massachusetts:** Austin-Hastings Co., Inc., 226 Binney Street, Cambridge 42 • **New Jersey:** Atlantic Tube & Metals, Inc., P. O. Box 595, Mountain View • **Pennsylvania:** Rutan & Co., 1 Bala Ave., Bala-Cynwyd • **Midwest:** Lapham-Hickey Steel Corp., 3333 W. 47th Place, Chicago 32, Ill. • **South:** Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg., Chattanooga 2, Tenn. • **Southwest:** Vinson Steel & Aluminum Co., 4606 Singleton Blvd., Dallas, Texas • **Northwest:** Eagle Metals Co., 4755 First Avenue South, Seattle 4, Wash. • **Far West:** Pacific Metals Co., Ltd., 2187 S. Garfield, Los Angeles 22, Calif.; Pacific Metals Co., Ltd., 1900 Third Street, San Francisco 7, Calif. Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.

For more information about products advertised on this page use Information Center, page 22.

Inside Dope

By GEORGE
F. TAUBENECK

(Continued from Page 1, Col. 1)

freezers, and would resent service difficulties with auto cooling devices. Their fears have been realized.

(3) Service, obviously, is the biggest problem with passenger-car air conditioning. Auto mechanics will have to learn whole new techniques and methods before they can take care of it properly. Being human, they resist this intrusion upon crustacean habits.

Exciting OEM Market

In contrast, air conditioning engineers and component manufacturers now realize that compressors, controls, clutches, belts, and driers must be designed especially for automotive

air conditioning.

Component producers aren't resisting this trend. In fact, they're exploiting this exciting new market eagerly.

Interestingly, independent auto air conditioning manufacturers cut costs by recirculating air inside automobiles. In contrast:

General Motors systems, like those of Ford and Chrysler, pull outside air into factory-installed car air conditioners.

In addition, they recirculate inside air portionally. (Ford, for example, provides an optional choice controlled by lever.)

Hence their installations require greater capacity and more expensive systems—another reason why the independents undersell them.

Footnote: compressors for automotive air conditioning are not rated in the familiar terms of horsepower, tons, or B.t.u.'s. They're measured by cubic inches of displacement.

Service—the BIG Problem

Most auto air conditioning service problems involve the compressor, expansion valve, and clutch. And brother, unless you live in Texas, you're in trouble when your auto air conditioner is troubled.

In the Southwest, independent manufacturers repair their own products through liaisons with distributors and dealers, plus (in some cases) their own branches.

Furthermore, Texas-Oklahoma-Louisiana garage mechanics (many of whom drive personally-remade air conditioned clunkers themselves) are striving to learn what a refrigeration system is all about.

Elsewhere, practically nothing. In fact, resentment! Auto mechanics in the East, Midwest, and Northeast in great numbers refuse to touch an air condition-

Auto Air Conditioner Sales

Year	Air Conditioned Cars		Percentage of Cars	
	For Year (Thousands)	Total (Thousands)	All Cars	New Cars
1951	2	2
1952	5	71
1953	20	27	.1	.3
1954	57	84	.2	1.0
1955	176	260	.5	2.5
1956	300	560	1.1	5.0
1957	450	1,010	1.9	8.0
1958	700	1,710	3.1	12.0
1959	1,000	2,710	4.8	17.0
1960	1,400	4,110	7.0	23.0
1961	2,000	6,110	10.1	33.0

ing installation, it is reported widely. They want no part of it, and they wish it would go away somewhere and hide.

True, automobile manufacturers have conducted schools and issued air conditioning service manuals. But the inoculation hasn't "taken" nearly so well as the doctors had hoped.

No doubt this is one reason why automobile manufacturers haven't pushed air conditioning in their advertising and sales promotion.

There are exceptions, of course. An occasional progressive dealer will install the "package"—then call in a refrigeration expert to charge the refrigerant and test for leaks.

However, such rare birds comprise "the exception which proves the rule."

Who will service transportation air conditioning? Obviously it won't be conventional garages and car dealerships in the Temperate Zone (not for a long, long time, anyway). Adverse attitude of their mechanics rules them out of contention, as of this writing.

Owners of "independent" systems fortunate enough to live near an "independent" manufacturer's branch or allied distributor should have few worries.

All other auto air conditioner service probably will be done—if and when—by refrigeration repair shops in the foreseeable future.

Apparently refrigeration servicemen are going to get this business by default.

Dale Mericle's series of articles on this subject (published exclusively in AIR CONDITIONING & REFRIGERATION NEWS) will help them.

Boo bood Beginnings

Shortly before Pearl Harbor the first air conditioned automobiles—Packards—ran unworshipped around Detroit. (As a matter of fact, Detroit folk still aren't wild about automotive air conditioning.)

We had to lick Hitler and Hirohito, and police things in Korea, before passenger car cooling caught fire. First interesting auto-cooling year was 1953. Thenceforth and thereafter, snowballing!

Last year General Motors, Ford, and Chrysler registered 78,000, 29,000, and 12,300 installations respectively. American Motors, pioneering in lower-priced factory built-in coolers, sold around 6,000 units; while Studebaker-Packard made approximately 2,900 installations.

Simultaneously independents increased their share of this market. Originally their sales effort was concentrated in the Southwest. Now they are mov-

ing outward. Mitchell (Mark IV), Frigikar, A.R.A., Novi, Vornado, Mobile-Aire, Frigiquip, Climatic Air, Capitol, Clardy, Lomerc, and Parkomat are among the leading independents.

Reasons for Buying

One advantage these eager-beaver independents have promoted is safety. Cooled cars prevent drowsy drivers, especially on monotonous turnpikes.

In addition they eliminate noise, smog, and dirt from the outside air. Radio reception is improved; women's coiffures remain unmussed.

Thus higher rates can be charged by taxicabs and rental cars which provide this boon. And it works out advantageously for commercial carriers, too.

For example: a food store chain introduced air conditioning units last May in all its salesmen's cars. Hours of useful work performed by the more comfortable sales representatives jumped 25% in June, July, and August.

Thereupon this company air conditioned the cabs of its trucks. Drivers made fewer stops, upped safety records—and the air conditioning units paid for themselves in nine months.

An estimate of sales to 1961, projected by "Inside Dope" three years ago, is working out pretty well.

Astonishing Growth

No air conditioning product, nor any major appliance, has enjoyed such quick growth as has the auto cooling business.

Increasing demand should result in lower prices. Initial cost partly is compensated by higher trade-in value for so-equipped automobiles, too.

Or the package-type unit can be transferred from old cars to new—thus stretching the original investment over the life of more than one automobile.

Hence, continued rapid progress honestly can be predicted for automotive air conditioning—the one segment of our industry which has no carry-over inventory.

Automotive air conditioning furthermore is improving rapidly product-wise.

Every year auto manufacturers put more glass in the bodies, step up engine heat—and lessen the underhood space available.

Meeting this challenge head-on, producers of car coolers engineer faster and better performance out of smaller and less costly packages.

To repeat: no refrigeration or air conditioning product ever has registered such a steeply

(Continued on next page)



AUTOMOTIVE AIR CONDITIONING

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nationally distributed,
nationally serviced brand—
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as high as 5,000-ft. Denver.

Over 200 new distributors
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Manufacturers of Fine Machinery for More Than Half a Century

Inside Dope

By GEORGE
F. TAUBENECK

(Continued from preceding page)
upward zooming sales curve as automobile air conditioning. It's a pistol!

Not Just the Rich

Apparently scads of folk who do not trade in old models for new ones every two or three years want air conditioning when they ride.

Returned warranty cards received by independent compressor manufacturers prove this point amazingly.

A surprising number of these returned postcards (which list make and model-year of the auto) reveal that said buyers of auto-cooling own three-year-old Chevies, five-year Plymouths, and even eight-year-old Buicks.

Automobile dealers don't want to bother with these used-car applicants for air conditioning, obviously. In fact, the job of installing and servicing automotive air conditioners, *per se* is a headache and a nuisance, as far as they are concerned.

So they are happy to leave it to refrigeration service specialists.

Astounding strength of "the old car" market augurs well for the future of this newest branch of the air conditioning industry, and for the stake of air conditioning specialists in its progress.

With the arrival of excitingly redesigned 1958 automobile models, next year could be great for the air conditioned new car market, too.

Sales of automobile air conditioners probably will more than double the number of residential installations next year.

If you aren't getting a piece of this business now, make plans, Mr. Subscriber!

Factory Installations

Combination heating and cooling systems are in the cards for most future factory installations of auto air conditioning, we hear.

For popular-priced new cars rear mounting may be discarded, it can be predicted, because of the extra expense of installing, and because the purchaser often cannot shift this integral-type installation to his next automobile.

Furthermore, station wagons and convertibles (including Ford's unique retractable hardtop) simply haven't space for rear-mounted installations.

In occasional instances, rear mounting presumably will be forced by other design requirements of new automobiles. (Example: Cadillac.)

Factory-installed air conditioning is in its infancy, of course. Initial jobs were big, cumbersome affairs which took up more than their quota of underhood space.

Moreover, they cost much too much, and in many instances overloaded already burdened tires, batteries, and electrical systems.

Nevertheless, Chrysler's Air-temp Div. and General Motors' ineptly named (to promote a cooling device) Harrison Radiator Div. are forging ahead, and

now are racing alongside Kelvinator-Rambler to obtain bigger percentages of this market.

Their problems are enormous, it must be admitted.

As much refrigerating capacity is required to cool off an automobile by 20° as would be needed to air condition a six-room ranch house.

Interior temperatures of automobiles parked in the sun with the windows closed have been recorded as high as 190° plus.

An automobile body consists of a mass of heat-absorbing steel and glass, you see.

It is hotted up even more by the occupants, by its powerful engine and exhaust system, by radiated heat from torrid pavements.

Solar radiation comprises the most immediate of all such burdens.

In a typical auto air conditioning system 9,000 B.t.u. per hour are postulated, and propor-

tionate increases are needed at higher speeds to compensate for increased engine heat transferred into the body.

Therefore, by definition, an auto air conditioner must be extra powerful.

Clutch Ultra-Important

On original auto air conditioning systems the compressor, belt-driven from the crankshaft, ran all the time. So, whenever the motor was started, it was

necessary to turn over the compressor.

Thereupon, unless the V-belt was disconnected during the winter, the compressor dragged an anchor. (By-pass valves shut off other parts of the system, of course.)

Wasteful gasoline consumption, and higher maintenance costs of engine and compressor parts resulted.

This problem was licked by
(Concluded on next page)

READY
TO
INSTALL
OR
SERVICE
IN
SECONDS!

ALCO "T"
SERIES
THERMO
VALVES

They come apart in
the line.

No torch, saw or
tube cutter needed!

You save time and trouble!

SEE THEM AT OUR
BOOTH 444
AT CHICAGO, NOV. 18-21.



For more information about products advertised on this page use Information Center, page 22.

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from preceding page)

adding a clutch to the assembly.

And that was a major "break through" for the automotive air conditioning business. A compressor clutch allows the refrigerating mechanism to run only when cooling is desired, you see.

Thus a driver can stop or start the conditioner at will. Furthermore, via pressure switches and thermostatic controls, a clutch assembly can provide automatic operation and predetermined temperatures.

Basic design elements of a compressor clutch embrace a stationary magnetic field mounted on the compressor's seal plate, and a composite rotor armature-pulley atop the compressor shaft.

When the clutch field is energized, flux passes from the field through the rotor to attract magnetically an armature to the rotor. Thereupon, a pulley transfers power to the compressor shaft which, in turn, awakens the compressor.

For quite a while assemblers of automotive air conditioners had no place to go for clutches. Then the Warner people in Beloit, Wisconsin, and Eaton Mfg. Co. in Cleveland, came to their rescue.

Eaton now is the biggest supplier. (Its rotating magnetic coil solves the problem magnificently).

More recently, Novi (Novi, Mich.) and U. S. Clutch Co. (Memphis) have entered the lists with magnetic clutches available to all comers. These are significant accomplishments.

P.S.: In addition to lower costs, there are valid reasons for use of by-pass valves, too.

Air Conditioning for Trucks and Cabs

Many major trucking firms have found it profitable to install air conditioning.

Chance Vought Aircraft of Dallas, for example, equipped its fleets of tractor cabs with air conditioning units, and now saves a full day on its 1,443-mile run from Dallas to Edwards Air Force Base, California.

Frequent stops formerly made necessary by driver fatigue have been eliminated on this truck run, thanks to cab air conditioning.

Practical use of air conditioned sleeper truck cabs also has become quite profitable throughout the nation.

When energizing cool air provides sufficient comfort for long-haul drivers, profits for truck owners mount.

Furthermore, the prevention of one major accident will more than pay the cost of the most elaborate air conditioning installation.

A reduction in accidents, better maintenance of schedules, and improved morale among drivers are pay-for-itself benefits derived from the installation of adequate cooling systems in trucks.

All these considerations "go double" for air conditioned taxicabs and rental fleets of passenger automobiles.

What a market potential!

Revere Redistribution Center In St. Louis

ST. LOUIS—In order to expedite shipment of its tubular mill products to customers in the St. Louis area, Revere Copper & Brass, Inc., announced that it is opening a redistribution center here.

Lester W. Morrell, St. Louis district manager, said the center will stock copper water tube and "Dryseal" copper tube.

The copper water tube is sold in straight lengths and in coils for plumbing, heating, and air conditioning lines. The Dryseal copper tube is used chiefly in refrigeration installations.

Preview

New Concepts, New Products In Store For Visitors at Exposition In Chicago

Animate Display

Feature of H & H Tube & Mfg. Co.'s exhibit in booth 258 will be an engineered animated display of large copper coils, it was announced the display will be located at the entrance of the booth.

Also exhibited will be the full line of H & H products including copper tubing and fabricated parts for air conditioning and refrigeration. Samples of bending, flaring, and spinning will be shown.

Focus on 'Tempscribe'

Bacharach Industrial Instrument Co. will focus attention in booth 222 on its "Tempscribe" temperature and operation recorders.

New remote reading bulb-type temperature recorder will be centered, the firm said. In addition, the sling psychrometer with built-in scale and automatic wick wetting system will be displayed along with "Florite" air velocity meters and other items.

To Highlight Method

Evis Mfg. Co. will highlight its water conditioning method in booth 252.

Evis conditioned water is claimed to erode and wash away old scale. The unit is formed of crystallized metal in the shape of a compact pipe attachment. All water passing through is influenced by the crystallized metal so behavior of water-borne sediment is changed, the firm claims.

Show New Advances

New advances in refrigeration valves, charging and testing units, and tubing tools will be spotlighted in the Imperial Brass Mfg. Co. exhibit, booth 205.

Among new items Imperial says it will show are: compact "Diamond 3-Way" valve with all tubing connections in line; Diamond angle valve; lightweight charging and testing unit; charging and metering instrument for systems requiring exact charge; residential air conditioning kit; all-chrome finish 9-in-1 flaring tool; female test caps; and developments in swaging tools.

Also included will be a comprehensive showing of Imperial items.

Offer Developments

"Radiax" mixed-flow blower units and five other developments in fans and blowers will be exhibited for the first time by Torrington Mfg. Co. in booth 361.

The firm's "A" series of five-bladed fans, available in 16, 18, and 20-in. diameters, provides efficient operation with less axial depth, the company said. "CJ" series of blower wheels and assembled units shown at the Exposition will be produced in standard wheel sizes up to 15-in. diameter. Other Torrington products also will be displayed.

Wide Range of Tubing

American Brass Co., subsidiary of Anaconda Co., will feature a wide range of products including copper refrigeration tube in long length coils, capillary tube, restrictor tube, bulb and capillary parts in booth 521.

Included will be a display of American Metal Hose Div. products such as vibration eliminators, flexible metal ducting, etc.

Introduce New Concept

Wall Tube & Metal Products Co. will introduce a new concept of condenser design known as "Fin Spin" in booth 642, the company announced.

Designed to increase the range of condensers available in the 1/2 to 5-hp. compressor range, Fin Spin is a tube with the fin mechanically spun-on in a helical fashion to the tube, it was explained.

Spotlight Packaging

Holsclaw Bros., Inc. will exhibit in booth 220 its complete line of "Handy" tube benders for bending all types of tubing and pipe.

For the first time will be shown a new method of packaging the item in bright blue and yellow cartons for easier identification and more saleable package, it was indicated.

Offers New Motors

Redmond Co., Inc. will feature its new line of type "AM-4" single bearing condenser fan motors in booth 264.

In addition, the entire line of motors, blowers, and special products will be exhibited, it was added.

To Display Line

McIntire Co. will display its entire line of driers, filters, strainers, and accessories in booth 160.

Featured will be items such as new suction line filters for permanent installation, single and double port liquid indicators, new "Perma-sorb" line of filter-driers, and all-aluminum drier and cartridge for aircraft refrigeration and air conditioning systems, it was stated.

List Headline Items

Refrigeration seals, piston rings, precision castings, and sintered metal parts will be headline items in booth 254, according to sponsor Rotary Seal Div., Muskegon Piston Ring Co.

'Hi-Dri' To Be Shown

Improved "Hi-Dri" heavy-duty drier is Wabash Corp.'s attention-getting item in booth 154, according to the firm.

In addition, a complete line of solder-type driers, strainers, and accumulators, "Blue Streak" driers and strainers, a complete line of prefabricated capillary tubes and accessories, "Easy-Flo" silver solder and flux, hermetic piercing valves, and speed couplers will be exhibited.



**In filters—
Polystyrene
keeps air
daisy-fresh!**

Polystyrene is the miracle plastic found only in Dust-magnet air filters. This amazing material collects dust by electrostatic attraction—resists humidity, stands up under temperature changes. Only service required is rinsing in clear water. For customer satisfaction install Dust-magnets in all air conditioning and warm air installations. We're happy to answer any and all questions—write or call STODDARD INDUSTRIES, INC., 1545 Kingsbury Street, Chicago 22. Telephone MOhawK 4-1650

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Preview

Will Focus Attention on First Showing of New Parts, Supplies Items

A "preview" of parts and supplies exhibits is presented on this and other pages of this issue of the NEWS to afford readers the opportunity to spot various displays which they may find interesting at the 10th Air Conditioning and Refrigeration Industry Exposition. This is the final preview issue. Commercial refrigeration equipment was covered in the Oct. 28 issue and air conditioning equipment in the Nov. 4 issue.

Highlights Insulation

New "Void-Free" method of applying "Palco Wool" insulation coupled with "Zero Perm" vapor barrier will be featured in booth 218 by Pacific Lumber Co.

Attendants will show how vapor barrier is installed to form a complete envelope with joints taped so in effect the vapor barrier is one continuous sheet of material with moisture vapor transmission of zero, the company claims. Following inspection of the vapor barrier, Palco Wool insulation is installed by the Void-Free method, it was pointed out.

Introducing New Firm

Introducing themselves to the industry, in booth 623 of Highside Chemicals, Inc., will be John F. Post, president, and Albert R. Shelby, secretary-treasurer of this new corporation which purchased the business conducted by Stewart Industries, Inc. (formerly Highside Chemical Co.).

The new firm is manufacturing those products formerly made by the predecessor company—"Thaw-zone," "Trace," and "Leak Lock"—and will display these items in the booth.

To Eye Thermometer

Electric Auto-Lite Co. will spotlight its inkless recording thermometer in booth 674.

Other items to be shown by the Industrial Thermometer Div. include recording thermometers and gauges, dial indicating thermometers, temperature recorders, pressure, vacuum, and compound recording gauges, it was added.

Spotlights Motors

Wagner Electric Corp. will spotlight in booth 672 a demonstration of four-step part-winding full-voltage starting of polyphase squirrel-cage motors by means of graphs which light up as the starter goes through its sequence.

One graph will show the per cent of locked current drawn, the other the per cent of locked torque obtained, on each of the four steps, the company pointed out. Another demonstration will illustrate the claimed relative quietness of sleeve bearing electric motors as compared with ball bearing units.

Ball Bearings Seen

Hoover Ball & Bearing Co. will highlight its entire line of "Quality" ball bearings as well as the full range of balls in a wide variety of metals in booth 423, the company announced.

Of special interest, it was added, will be new "Contact Seal Teflon" bearing. All visitors will receive a small gift.

Cooling Controls Due

New refrigeration and air conditioning controls including the "Klixon" manual reset 202 fixed temperature thermostat will be highlighted in booth 701 by Spencer Thermostat Div., Metals & Controls Corp.

Other products to be displayed include inherent over-heat motor protectors, motor starting relays, and precision switches.

General Plate Div. will exhibit clad precious and industrial metals, thermostat metals, and electrical contacts.

Prominent Display Set

Vibration eliminators, flexible nipples, and pump connectors will be the prominent display in Cobra Metal Hose Co.'s booth 720. Refrigerant hose will also be exhibited.

Relief Valve Viewed

On display in Cyrus Shank Co.'s booth 216 will be the Shank ammonia relief valve assembly, "Watkins" calibrated flow "Cal-

Flo" hand expansion valve, and new purge valve made from ductile iron.

Hinged Unit Shown

Ritter Metal Corp. will have on display in booth 629 its new "Free 'N Easy" kit, a hinged unit which opens like a door, is made to "exact" size needed for outside or inside installation of an air conditioner unit.

"Jiffy 60" slider kit will also be shown. It is made to fit any window up to 60 in. wide and slides behind an air conditioner unit which is wholly inside.

Displays Filter-Drier

Design and performance features of "TMC" molecular sieve filter-driers will be shown by cross sections, cutaway models, and charts covering adsorption, pressure drop, acid removal, and other features at Tube Manifold Corp.'s booth 727.

Just four models of the filter-driers are required to handle capacities from ¼ to 15 tons, according to the company.

Flexible Plastic Set

Armstrong Cork Co. will devote its exhibit in booth 163 to "Armaflex," which is a flexible foamed plastic insulation material available in pipe covering or sheet form. It is claimed to be vapor impervious.

The display will show "the speed and ease" with which Armaflex can be applied to straight and curved sections of copper tubing or iron pipe and will demonstrate how it prevents condensation, the company said.

Eyes Unit Cleaner

A new cleaner—X 12—for burnt out sealed unit compressors claimed to eliminate need for more than one dip will be the center of attention in Sealed Unit Parts Co., Inc.'s booth 162.

"Tapaline, Jr.," a newly designed tapaline used with a master valve, will also be highlighted, the company said, along with new strainer capillary combinations.

Other items to be displayed: strainers, capillaries, valves, gaskets, oil additive, rust preventa-

tives, aluminum and rust cleaners, connecting rods, terminals for sealed units, rebuilt compressor for sealed units, springs, and miscellaneous parts for rebuilding sealed units.

Features Corkboard

Corkboard and expanded polystyrene will be shown by United Cork Cos. in booth 338, the company announced.

To Show 'Thin-Model'

New "Thin-Model" shaded-pole and permanent split-capacitor motors for room air conditioners will hold center stage in Emerson Electric Mfg. Co.'s booths 660-61.

In addition, new compact ¼-hp. motor for oil burners, weighing 1½ lbs. less than the firm's former type, and also available in ½-hp. and larger sizes, will be on display, the company said.

"Northwind" room air conditioners which are claimed to feature higher capacity, compactness, and improved air distribution pattern, plus special models in the low-ampere category, will be shown.



SPORLAN

proudly presents

A NEW PEAK PERFORMER

at the 10th EXPOSITION

AIR-CONDITIONING and REFRIGERATION INDUSTRY

Booth Nos. 323-325

ITT will add another link in this ever growing chain of Peak Performers

THERMOSTATIC EXPANSION VALVES
with Flow-Master Elements and Selective Charges

SOLENOID VALVES
SOLENOID PILOT CONTROL
with Blue Seal Coils

CATCH-ALL FILTER-DRIERS
with the Famous Molded Porous Core

REFRIGERANT DISTRIBUTORS

LMC LIQUID LEVEL CONTROL

STRAINERS

NOVEMBER 18-21, 1957

SPORLAN VALVE COMPANY
7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI

INTERNATIONAL AMPHITHEATRE... CHICAGO, ILLINOIS





Preview

New Products for 1958 To Be Highlighted In Original Equipment Makers' Booths

To Picture Production Depicts Cooling Story

Viking Copper Tube Co. will blend copper and black colors to form a modern background for the firm's range of copper tubes and coils in booth 312.

Part of the exhibit will be devoted to a picturization of producing operations and another to various types of tube and coils. A highlight feature will be a continuously drawn coil of several thousand feet which will be subject of a guessing contest as to the exact length, the company said. Award for the closest estimate will be a 1958 model full color television set; other prizes will be given out.

Highlights Desiccant

Davison Chemical Co., Div. of W. R. Grace & Co. will highlight its PA 400 refrigeration grade silica gel desiccant in booth 364.

The history of man's effort to cool himself and his surroundings will be depicted in booth 402 by "Freon" Products Div., E. I. du Pont de Nemours & Co., Inc.

Six shadow box displays will be used to trace cooling developments through the ages, the company said. Modern methods of cooling with "Freon" refrigerants will be briefly discussed in live demonstrations on a tiny stage.

Reversing Valve Eyed

Watco, Inc. reports it will present a "most exciting" display in booths 235-236.

The company will feature a manually operated reverse cycle valve incorporated in a hot gas defrost system in which evaporator coils are formed to spell the firm's name. With a turn of a

switch, coils will frost or defrost before visitors' eyes "almost instantaneously." The system will incorporate several of Watco's products.

An underwater demonstration of the line tap valve under constant refrigerant pressure and a panorama of the firm's entire line of parts will round out the exhibit.

'Swinging' Display Seen

Kerotest Mfg. Co. will have display area highlighted by a swinging pendulum 5 ft. in diameter in its 20-ft. long booth 519 to demonstrate "The Swing Is to Kerotest for Advanced Lines of Valves and Fittings."

Two girl demonstrators will describe the valves and fittings while they assemble and disassemble parts and answer questions before lighted panels picturing valves and artwork reproductions of Kerotest ads, it was noted.

Water Regulator Due

Marsh Instrument Co. will exhibit its new 1-in. water regulating valves, adjustable from 60 to 270 p.s.i. and suitable for use with

both Refrigerants 12 and 22 in booth 201, the company said.

In addition, the firm's full line of refrigeration and air conditioning gauges, thermometers, water regulating valves, solenoid valves, and needle valves will be shown.

Tools To Be Viewed

Price & Rutzebeck will feature the "Handy Angle" saw, "Planetor Magic Feed" boring bits, and "Grips Rite" angle head in booth 737.

Will Weld In Booth

A welding booth where pieces of aluminum tubing will be welded on the spot will be a feature of Reynolds Metals Co.'s booths 451, 508.

In addition, an operating anodizing unit which will color anodize aluminum coasters will be exhibited along with a graphic display of step-by-step production of tubed sheet, panels on aluminum air conditioner, refrigerator, and freezer parts, examples of aluminum applications in commercial air conditioning and refrigeration, a tier of tubed sheet evaporators

showing different models and different anodized colors, and a home freezer design showing all shelves produced from a piece of tubed sheet resulting in one continuous freezing circuit.

Emphasizes Tubing

Chase Brass & Copper Co.'s display in booth 562 will emphasize advantages of copper tube for air conditioning and refrigeration purposes, along with other brass and copper products, it was announced.

Of special interest, Chase says, will be a large coil of refrigeration tube on a new disposable reel which will hold from 1,800 to 3,000 ft. of tube.

To Spotlight Oil

Sun Oil Co. will introduce new, improved refrigeration oil, "Suniso 3G," in booth 539, it was announced.

Designed to work well with all modern refrigerants, Suniso 3G has lower floc point, greater stability, and increased copper-plating resistance, according to the company.

Filter Driers Set

Remco, Inc. will spotlight its "Super-Flo" and "Cross-Flo" filter driers in booth 336.

Many receiver-filter-drier-liquid indicator combinations will also be featured, and, for the first time, a "T" type combination unit will be shown.

Remco's spring-loaded pressure relief valve, rupture type safety devices, and an entirely new line of liquid indicators with flare end connections will be among several other featured items on display.

Animated Displays Due

Animated displays, several new products, and larger display space than ever before will be highlights of Ranco Inc.'s booth 410.

New control system for automatic operation of a heat pump will be most prominently featured, it was explained. Animated trans-lite exhibits will detail the operation of new reversing valves and de-icer controls as the heat pump is taken through the heating and de-icing cycles in a 3-ton central air conditioning system.

Another moving display will be a new defrosting valve on a rotating household refrigerator.

Offers Capacitor Line

Aerovox Corp. will display a complete line of motor-start and motor-run capacitors for air conditioning, refrigeration, and similar uses in booth 745, it was announced.

'Power Pack' Units Eyed

Two new "Power Pack" units will be displayed for the first time in booth 412 by Huck Mfg. Co., riveting and fastening process firm.

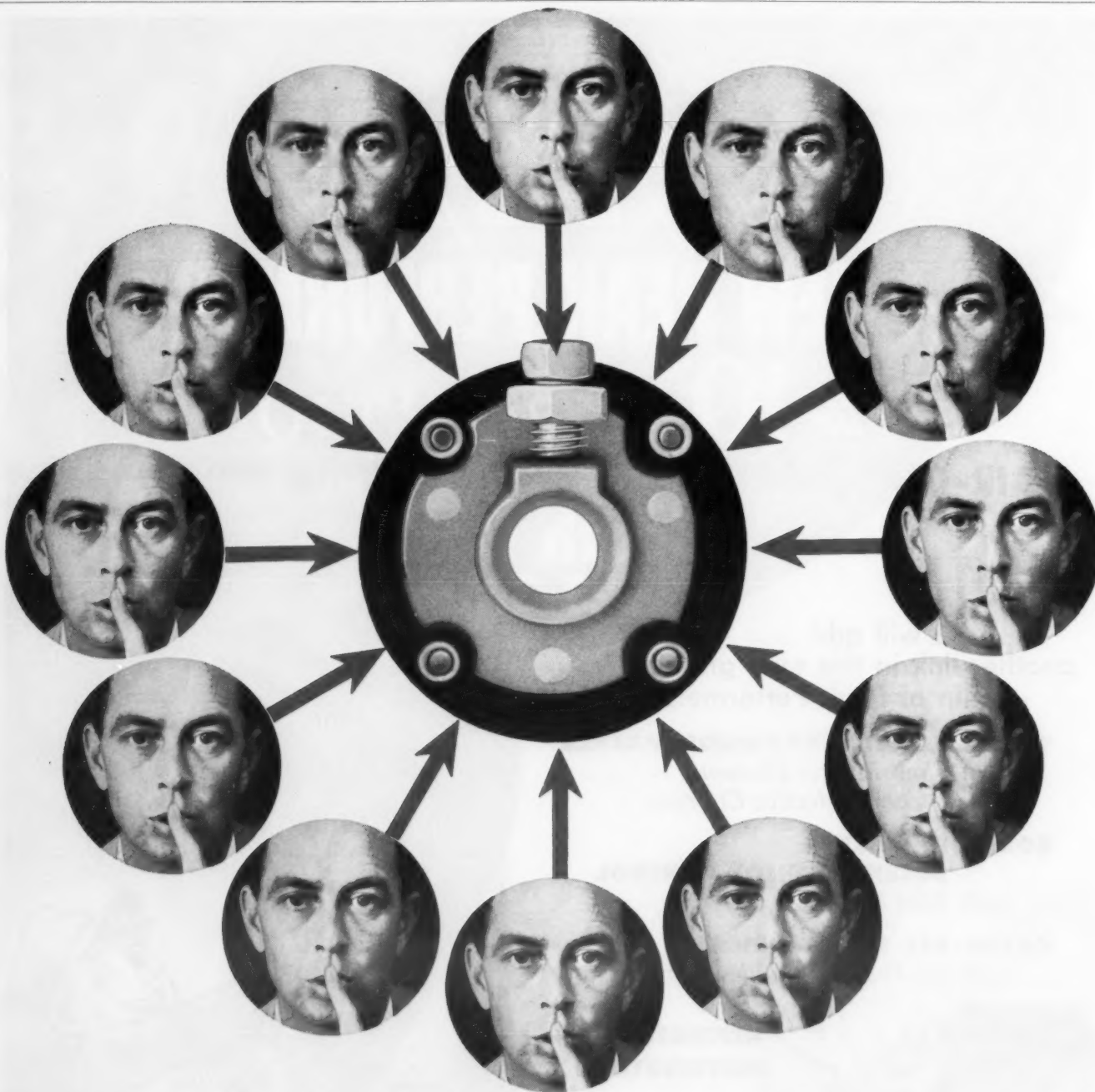
Model 800 can power any combination of two standard Huck hydraulic tools; model 801 will operate any combination of four standard Huck hydraulic driving tools, the company indicated.

Also to be exhibited will be CL commercial "Huckbolt" fasteners, "Daisy" blind rivets, PT pull-through blind rivets, 9SP self-plugging blind rivets, pneumatic and hydraulic driving tools, and a variety of other Huck fasteners for the air conditioning and refrigeration industry, it was added. Visitors will be able to drive fasteners for themselves during demonstrations.

To Feature Door Unit

"Flexidor" rubber batten doors made of "live" neoprene and designed to withstand a "bump-open" of power trucks will be the feature of Jamison Cold Storage Door Co.'s booth 101, the firm announced.

In addition the "Lo-Temp" door with new "Frostop" will be exhibited. This has adjustable temperature control and prevents icing and freezing shut of cold storage doors, the company explained.



SILENCE IS THE HUB* OF THE MATTER



*NEOPRENE Here at Utility we take a meager view of noise... believe it

has no place at all in our Direct Drive Blowers. But licking the problem of noise was a challenge, and a tough one. The key point of noise is the blower hub. What material could be used to give it all the qualities of lifetime service, yet provide quiet operation under all conditions?

We found Neoprene to be the ideal material to shush noise. How to build that Neoprene Hub was and is the "secret of silence" of all Utility Direct Drive Blowers. This silence factor has boosted sales for manufacturers of heating, cooling, refrigerating and ventilating equipment the country over. Just another example of go-ahead planning, years-ahead engineering that makes Utility the firm to consult when considering only the best in blowers and parts to fill your manufacturing needs.

YOU CAN'T MATCH UTILITY FOR PRODUCT AND PRICE! Manufacturers of heavy and standard duty blowers for heating, air conditioning and ventilating installations. Producers of blowers and blower parts for original equipment manufacturers. Write for catalogue data.

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Export Division
141 So. El Camino Drive
Beverly Hills, Calif.
Cable: UTILIFAN, Los Angeles

Preview

Advisers To Be on Hand To Assist Booth Visitors, Offer Demonstrations

Displays Waxfree Oils Unit Coolers Eyed

Texas Co. will feature regular industrial exhibit of "Texaco Capella" waxfree oils in booth 203, the firm reported.

Features Name Plates

Etched, embossed, engraved, lithographed, metal name plates, and metal embossed stampings will be featured in booth 656 by George J. Mayer Co., Inc.

To Highlight Fittings

Weatherhead Co., Fort Wayne Div. will highlight refrigeration fittings, valves, receivers, mufflers, driers, and hose assemblies in booth 738.

Other items to be displayed include flared and flareless brass and steel tube fittings, reusable and P/A hose assemblies, and special screw machine products.

Heating Blankets Set

"Us-Kon" heating blankets for defrosting coils in unit coolers, display cases, and similar refrigeration equipment, will be featured in booth 653 by U. S. Rubber Co., Us-Kon Div.

Us-Kon heating blankets for melting drop ice in drain pans, for evaporating moisture, and preventing condensation will also be shown.

Shows Rubber Tubing

Closed cellular rubber tubing for cold line insulation will be featured in booth 137 by Rubatex Div., Great American Industries, Inc.

Fabricated parts of closed cellular rubber and sponge as furnished for air conditioning and refrigeration will also be exhibited, it was added.

Fabricated Parts Due

Fabricated tubular parts including return bends, manifolds, headers, spun end parts, strainers, accumulators, special bent tubes, assemblies, wrot fittings, screw machine parts, and flaring are new items to be shown in booth 731 by Elkhart Products Corp.

Headlines Flat Panels

"Roll-Bond" flat one side panels will be new equipment highlighted in booths 537-538 by Roll-Bond Products, Western Brass Mills Div., Olin Mathieson Chemical Corp.

To See Thermostats

Series G1, G2, G1A, G2A, G4, and G4A "double duty" electric thermostats and type L snap-action preset temperature limiting thermostat will be headlined items in booth 658 by Wilcolator Co.

Sets Tube Packaging

New packaging concept for copper refrigeration service tube for wholesale distributors, a round carton with center hole, will be featured by Wolverine Tube, Div. of Calumet & Hecla, Inc. in booth 551.

Other items to be shown are "Trufin," integrally finned tube; "Capilator," capillary tube for restriction purposes; extruded and drawn aluminum tube; commercial copper tubing; "Spun End Process" for strainers, driers, and accumulators; and other fabricated parts.

Shows Start Control

General Electric Co.'s Apparatus Sales Div. will show a full acceleration part-winding start control in booths 111-114.

Other items to be exhibited are leak detectors, capacitors, and a complete line of motors for air conditioning and refrigeration equipment.

Refrigeration Appliances, Inc. will spotlight its new line of semi-circle unit coolers and redesigned line of "BUC" unit coolers in booth 401.

Air-cooled condensers, air conditioning units for residential applications, and a representative line of commercial refrigeration evaporators will also be shown.

Car Controls Viewed

Controls Co. of America will devote much of its booths 310-311 of A-P Controls Div. to publicizing the auto air conditioner makers who use the firm's controls.

Also displayed will be a new line of solenoid valves along with a new line of vending machine solenoids, plus door switches, fan motors, and other items.

To Spotlight Drive

An adjustable speed drive designed for stirring operation on a refrigerated bulk cooler, an all-angle sleeve bearing for fractional horsepower motors, and 75-hp. motors in NEMA re-rated frames will be focal points in Century Electric Co.'s booth 625.

Offers 2 New Items

Two new items will be spotlighted by Kenmore Machine Products, Inc. in booth 307 besides the regular line of strainers, driers, etc.

"KMP Kap-Kits" to provide a complete capillary replacement with metering control and drier placed in the correct location is first featured unit. Second is "KMP Moisture Magnet" with molecular sieve—a non-refillable fitting refrigerant dehydrator available in five models.

Defrost Controls Due

New equipment to be centered in Paragon Electric Co.'s booth 313 include 8000 and 8100 series commercial defrost controls.

Recharger To Be Seen

"Frig-I-Gas," a measured refrigerant recharge package in disposable containers will highlight booth 640, according to DeMert & Dougherty, Inc.

Air Meter Featured

No. 460 air meter and No. 430 air filter gauge are new items of special interest to be shown in booth 331 by F. W. Dwyer Mfg. Co.

Also displayed will be draft gauges, manometers, combustion test sets, gas pressure kits, air velocity meters, pressure actuated switches, air filter gauges, pitot tubes, flowmeters, and wind speed indicators, it was added.

Duct Sealer Shown

Duct sealing tape and insulation adhesive are new items to be exhibited in Duro-Dyne Corp.'s booth 330, it was announced.

Also displayed will be "Duro" blade kit and vane rail, flexible duct connectors, portable spot welder, damper regulators and quadrants, and metal hand punches.

Reversing Valve Due

A newly developed reversing valve for heat pumps and hot gas defrost applications will be featured in Alco Valve Co.'s booth 444.

Improvements in design of thermostatic expansion valves and a new PO series featuring a contest in "the simplicity of Alco come-apart construction" will be other highlights of the exhibit, the company said.

Special designs in solenoid valves, pressure regulators, and "Venturi" type distributor will also be shown.

Analyzer Highlighted

Compressor analyzer, commercial and industrial electrical analyzer, and high vacuum pumps for refrigeration service are new items to be exhibited in booth 146 by Airserco Mfg. Co., Inc.

Also a complete line of refrigerant handling and measuring equipment and replacement parts will be shown.

HIGH WORKING PRESSURE—500 PSI

LOOK AT THAT TRANSVERSE FLOW

LOOK! GRANULAR DESICCANT TOO

BRASS END CONNECTIONS—EASIER TO SEAL

AN ENTIRELY NEW DESIGN

FILTER "Dri-Cor" DRIER

NO FOOLING, LESS PRESSURE DROP

CERAMIC FIRED DESICCANT BLOCK

OH BOY! MICRONIC FILTRATION TOO

ABSO-DRY PRESSURE SEALED "THEY HISS & TELL"

See our Exhibit BOOTH 669 10th Exposition Air Conditioning & Refrigeration Industry International Amphitheater Chicago Nov. 18-21.

"DRI-COR"...

a New Name — a Finer Filter-Drier

■ You can expect the best from Henry. Here's the new "Dri-Cor" Filter-Drier. It incorporates an activated ceramic desiccant block for micronic filtration in combination with granular desiccant for high efficiency drying with low pressure drop. Drying and filtering are properly proportioned. Like other Henry Driers the "Dri-Cor" is

thoroughly reactivated and pressure sealed at the factory, through the exclusive patented Henry Abso-Dry process.

This assures maximum drying efficiency at the time of installation. See this new type Filter-Drier at the show. It is definitely a "must" for those who demand the best.

HENRY VALVE CO.

MELROSE PARK, ILLINOIS (Chicago Suburb)

Cable: Hevalco, Melrose Park, Illinois

VALVES, DRIERS, STRAINERS, AND ACCESSORIES FOR REFRIGERATION, AIR CONDITIONING, AND INDUSTRIAL APPLICATIONS



LISTED BY UNDERWRITERS' LABORATORIES, INC. UNDER RE-EXAMINATION SERVICE FOR MAXIMUM WORKING PRESSURE OF 500 PSI

PRECISION-MADE

with skill and care

Through the past 20 years Stubnitz Greene has established a reputation for quality products in the automotive field. Now, combined with Quincy Products, these two organizations bring their skill and careful craftsmanship into the manufacture of products for the refrigeration and air conditioning industry.

Your needs for quality coils, condensers, relay switches and similar products, coupled with engineering ability at low cost can be met with full satisfaction.

Write for a recommendation tailored to meet your particular requirements.

QUINCY PRODUCTS COMPANY
DIVISION OF
STUBNITZ GREENE CORPORATION
QUINCY, MICHIGAN

RSES Features Refrigerants' Stability Talk at Chicago Meeting Nov. 16-18

CHICAGO — Complete program for the 20th annual convention of the Refrigeration Service Engineers Society has been announced.

The convention runs from Nov. 16 through Nov. 18 in the Morrison hotel here.

The program follows:

FRIDAY, NOV. 15

9 a.m.—Board of directors meeting, Hollywood room.

SATURDAY, NOV. 16

9 a.m.—Registration, Grand Ballroom foyer.

1 p.m.—Convention call to order, Milton O. Larson, convention chairman. Introduction of international officers and directors.

In Memoriam, J. Marshall Lock, Toronto, Ont., Can.

Greetings from Air-Conditioning & Refrigeration Institute, Lud Emde, president.

Greetings from Air-Conditioning & Refrigeration Wholesalers, Irving J. Fajans, president.

International RSES president's address, William E. Tierney.

International secretary's report, H. T. McDermott.

International treasurer's report, Charles G. Bell.

Reports of international committee chairmen.

Appointment of convention committees.

4 p.m.—First educational session.

"Stability of 'Freon-12' and 'Freon-22' Refrigerants" by Dr. Donovan E. Kvalnes, manager, Technical Freon Products Div., Organic Chemicals Dept., E. I. du Pont de Nemours & Co.

5 p.m.—Adjournment.

SUNDAY, NOV. 17

9 a.m.—Information Please.

11 a.m.—"Repair and Rewinding of Motor Stators for Hermetic Sealed Units" by Bryant L. Britt, manager, electrical service department, Wagner Electric Corp.

12 noon—Adjournment for lunch.

1 p.m.—"Application and Servicing of High Vacuum Pumps in the Air Conditioning and Refrigeration Industry" by H. G. Saunders, assistant to the sales manager, Kinney Pump Div., New York Air Brake Co.

2 p.m.—"What a Supermarket Operator Expects of a Service Contractor" by W. H. Longenbaker, director of store engineering department, Independent Grocers Alliance.

3 p.m.—"Centrifugal Water Circulating Pumps, Piping Design, and Service" by Harry Barclay, assistant manager, industrial division, Bell & Gossett Co.

4 p.m.—"Labor Saving Tools and Instruments" by A. E. Manning, vice president, Kelmore Corp.

5 p.m.—Adjournment.

MONDAY, NOV. 18

9 a.m.—Information Please.

10 a.m.—Concluding business session.

Election of officers.

7 p.m.—Banquet and Entertainment, Terrace Casino. Herman Goldberg, master of ceremonies.

TUESDAY, NOV. 19

9 a.m.—Information Please.

10 a.m.—"Heat Pumps for Residences" by R. P. Cook, head of engineering department, Typhoon Heat Pump Co.

11 a.m.—"Air Distribution Problems and What a Service Engineer Can Do to Help Overcome Them" by F. Honerkamp, chief of engineering and design development, Anemostat Corp. of America.

12 noon—Manufacturers Service Managers Club of RSES luncheon meeting, Clark room.

Versagi Joins NEWS As Technical Editor

DETROIT—Frank J. Versagi has joined the staff of AIR CONDITIONING & REFRIGERATION NEWS in the capacity of technical editor.

He comes to the NEWS from Mueller Brass Co. where he was chief chemist for three years and manager of plastic sales development for one year.

While with Mueller Versagi wrote several articles for the NEWS. He has also written articles for a number of technical and business publications, and for the religious press. His book, "The Routine Analysis of Copperbase Alloys" will be published by Chemical Publishing Co., New York, early in 1958.

Versagi studied at Case Institute of Technology and Fenn college, both of Cleveland, and at the University of Salzburg, Austria. He is a former chairman of the Community Relations Board of Port Huron.

New Firm Formed

ROCKINGHAM, N. C.—Capitalized at \$100,000, Scholl Plumbing, Heating & Air Conditioning, Inc. has been organized here by Paul School.

IT'S VA. NOT PA.

Don't look for the Westinghouse Electric Corp.'s Air Conditioning Div. in Staunton, Pa., as it was listed in the Oct. 28 list of exhibitors at the 10th Exposition of the Air Conditioning and Refrigeration Industry. It's still in Staunton, VA. Don't look for Staunton, Pa. either. It isn't there.

King-Seeley --

(Concluded from Page 1)

ance company on a long-term basis to finance the purchase.

King-Seeley is a supplier of speedometers, gauges, instrument panels, and other equipment for the automotive industry and also manufactures power tools, domestic fans, and electrical control devices at plants in Ann Arbor, Menominee, Scio, and Ypsilanti, Mich.

WANTS RELIEF FROM RESPONSIBILITY

Queen Products was founded by Trow in 1921, and control has been in his hands and that of his family since that time. Trow, now 68, "has wished to be relieved of the responsibility of operating his company but has agreed for a period of up to one year to continue to supervise its business as a member of the King-Seeley organization," the announcement said.

MAKES ICE-MAKERS, CAMPING EQUIPMENT

In addition to ice-making machines, Queen Products produces finishing and deburring equipment; camping equipment consisting of portable ice boxes, gasoline lanterns, and stoves; and oil and gas heaters for domestic space heating.

The Minnesota firm operates two plants about one mile apart, with a total floor area of 350,000 sq. ft. and employs 800. It had net earnings of \$616,000 in its last fiscal year.

In a letter to stockholders of King-Seeley, Gustine said: "Our study of this company has convinced your management that it has an excellent market potential in the fields in which it is operating."

King-Seeley plans no changes for the present in Queen Products policy, personnel, or type of products manufactured, according to a King-Seeley spokesman.

For reliability in refrigeration and air conditioning equipment—look to VILTER!

With the Vilter line you will find reliability an accepted byword nationally. Thousands of satisfied customers will stand up for Vilter equipment's dependable service; long life; efficient, economical performance—equipment backed by ninety years of intense activity in engineering, research, and installation know-how in the refrigeration and air conditioning industry.

With the versatile Vilter line you can handle practically any commercial and industrial refrigeration and air conditioning application in your area on an attractive competitive basis. Included in the Vilter line are ammonia and Freon compressors from 10 HP to 200 HP and larger, booster compressors, condensers, blast freezers, Uni-Chillers, brine coolers, heat exchangers, Pakicers, Polarflake ice machines, latent heat storage systems, Vertibay coils, water coolers, shell and tube vessels, air conditioners,

Zer-O-Disc fin coils, and rotary liquid pumps among others. Vilter supplies equipment to the dairy, brewery, food, fishing, meat packing, canning, chemical, and vegetable processing industries; also for stores, churches, office buildings, and industrial plants.

Vilter distributors receive strong home office support. Engineering application counsel is always available. Field tests are conducted regularly to try new applications... to suggest installation improvements. The Vilter line is advertised widely in the trade press with distributor applications being featured.

It will pay you to consider the Vilter line for your area. Why not get acquainted? You will like our way of doing business. For full information write to Department G, The Vilter Manufacturing Company, 2217 South First Street, Milwaukee 7, Wisconsin.

Come and visit us at the ARI Exposition, Chicago International Amphitheatre, November 18-21, Booth No. 136.

Vilter

QUALITY CRAFTSMANSHIP

that lasts...
ENGINEERING DESIGN

that guarantees performance

REFRIGERATION and AIR CONDITIONING

THE VILTER MANUFACTURING COMPANY, Milwaukee 7, Wisconsin

Air Units • Ammonia & Freon Compressors • Booster Compressors • Baudelot Coolers • Water & Brine Coolers • Blast Freezers • Evaporative & Shell & Tube Condensers • Pipe Coils • Valves & Fittings • Pakice & Polarflake Ice Machines

For more information about products advertised on this page use Information Center, page 22.

Master Program Lists Events of Show Week

In the following master program, the scheduled events of various industry associations are listed. The initials by which these associations are designated and the hotels where they will conduct their activities are:

ARI	AirConditioning & Refrigeration Institute	Sherman hotel
ARW	Air-Conditioning & Refrigeration Wholesalers	Morrison hotel
ASRE	American Society of Refrigerating Engineers	Shoreland hotel
NAPRE	National Association of Practical Refrigerating Engineers	Del Prado hotel
NCRSA	National Commercial Refrigerator Sales Association	La Salle hotel
NHAW	National Heating & Air-Conditioning Wholesalers, Inc.	Morrison hotel
NWAH&ACA	National Warm Air Heating & Air Conditioning Association	Morrison hotel
RACCA	Refrigeration & Air Conditioning Contractors Association	Drake hotel
RSES	Refrigeration Service Engineers Society	Morrison hotel

Wednesday, Nov. 13

10 a.m.—ASRE program committee meeting.
2 p.m.—ASRE committee meetings.
5 p.m.—ASRE council dinner meeting.
8:30 p.m.—ASRE reception.

Thursday, Nov. 14

9 a.m.—ARW manufacturers' relations committee meeting.
9:30 a.m.—ASRE first technical session and engineering conference.
2:30 p.m.—ASRE second technical session and conference.
12:45 p.m.—ASRE welcome luncheon.
2 p.m.—ARW manufacturers' relations committee meeting.

Friday, Nov. 15

9 a.m.—ARW board of directors meeting.
9 a.m.—RSES board of directors meeting.
9 a.m.—ASRE engineering conferences.
1:30 p.m.—ASRE forums.
1:30 p.m.—ASRE inspection trip.
6:30 p.m.—ASRE cocktail party and dinner dance.

Saturday, Nov. 16

9 a.m.—ARW board of directors meeting.
9 a.m.—ASRE third technical session.
1 p.m.—RSES opening business session.
4 p.m.—RSES first educational session.
7 p.m.—ARW past presidents' dinner.

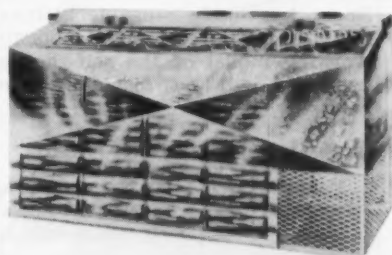
Sunday, Nov. 17

9 a.m.—RSES second educational session.
9 a.m.—RACCA board of directors meeting.
9:30 a.m.—ARI board of directors meeting.
12 noon—ARW "kickoff" luncheon.
12 noon—NHAW board of directors meeting.
12:15 p.m.—NCRSA board of directors luncheon meeting.
2 p.m.—ARW annual business meeting.
4:30 p.m.—NCRSA-CRMA joint relations committee meeting.
5:15 p.m.—ARW meeting of 1958 board of directors.
5:30 p.m.—RACCA reception and cocktail party.
6:30 p.m.—ARW officers reception.
7:30 p.m.—ARW annual banquet.

Monday, Nov. 18

8 a.m.—NHAW committee meetings.
9 a.m.—ARW wholesalers meeting.
9 a.m.—RACCA opening session.
9 a.m.—RSES educational session.
9:30 a.m.—NCRSA general meeting.
9:30 a.m.—NAPRE business and educational session.
12 noon—RACCA luncheon.
12 noon—NHAW luncheon meeting.
12:30 p.m.—NCRSA luncheon.
2 p.m.—Opening of the 10th Exposition of the Industry.
2 p.m.—NCRSA general meeting.
2:15 p.m.—NHAW panel workshop session.
3 p.m.—RACCA board of directors meeting.
6:30 p.m.—NCRSA reception and annual banquet.
7 p.m.—RSES annual banquet.
7:30 p.m.—NAPRE informal party.

"A CASE OF COOL JUDGMENT"



**FLO-COLD
DRINKMASTER
STAINLESS STEEL
CUBER — COOLER.**

SOLD THRU DEALERS ONLY
WRITE

**United Friguator Engrs.
MENOMINEE, MICH.**

AVAILABLE IN SIZES 4 to 10 FT.

Tuesday, Nov. 19

8:15 a.m.—NHAW meeting.
9 a.m.—RSES concluding technical session.
9:30 a.m.—NCRSA general meeting.
9:30 a.m.—NAPRE educational session.
9:30 a.m.—NWAH&ACA committee meetings.
9:30 a.m.—RACCA general session.
10 a.m. to 6 p.m.—Exposition of the Industry Open.
11:30 a.m.—NHAW business conference and buffet luncheon.
12 noon—RACCA annual business luncheon.
12:30 p.m.—NCRSA luncheon.
2 p.m.—NCRSA general meeting.
7:30 p.m.—NHAW annual banquet.

Wednesday, Nov. 20

7:30 a.m.—NAPRE breakfast session.
9:30 a.m.—ARI credit committee meeting.
9:30 a.m.—NWAH&ACA committee meetings.
9:30 a.m.—NHAW workshop panel.
10 a.m. to 6 p.m.—Exposition of the Industry Open.
12:30 p.m.—NHAW luncheon meeting.
2:15 p.m.—NHAW business session.

Thursday, Nov. 21

9:30 a.m.—ARI air conditioner manufacturers credit committee meeting.
9:30 a.m.—NAPRE educational session.
9:45 a.m.—NWAH&ACA general meeting.
10 a.m. to 4 p.m.—Exposition of the Industry Open.
11 a.m.—NAPRE business session.
12:30 p.m.—NWAH&ACA luncheon session.
2:30 p.m.—NWAH&ACA general session.
6 p.m.—NWAH&ACA cocktail party.
6:30 p.m.—NAPRE new officers reception, and annual dinner.

Friday, Nov. 22

9:30 a.m.—NWAH&ACA general session.

Exposition Bus Will Operate at 15-Minute Intervals

CHICAGO—Operating at 15-minute intervals during the show hours, throughout the 10th Exposition of the Air Conditioning and Refrigeration Industry, free bus service between major loop hotels and the International Amphitheatre will be provided by Marsh Instrument Co.

In the morning, operations will begin one half hour before show opening and in the evening buses will run until a half hour after the doors are closed. Extra buses will be furnished during the peak morning and evening activity, according to this Skokie, Ill. firm.

Regular bus stops in the loop are hotels Sherman, Morrison, Palmer House, and Conrad Hilton.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich. Only 25¢ each.



**"For servicing hermetics profitably,
Imperial gives me everything I need!"**



Saves valuable shop and on-job hours on rechargeable units

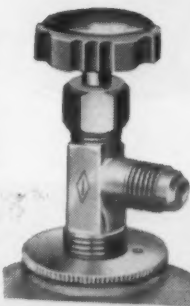
Imperial hermetic servicing kits and accessories are key equipment in shops known for fast, guaranteed servicing on sealed hermetic units. And that includes everything needed for charging, purging and testing!

It makes a lot of sense to equip with a line that gives you many high-speed working advantages. For example, in Imperial Hermetic Service Kits, the gauge and wheel handle are always attached to the valve, ready for instant use. You'll like the fast action of Imperial Kwik-Kupler fittings on charging lines.

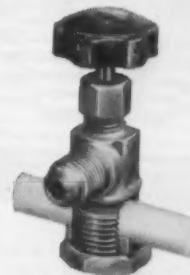
Imperial piercing valves tap line at any point. Tap-a-Can dispensing valve saves extra refrigerant . . . eliminates waste.



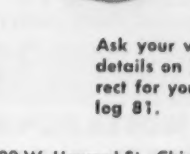
NO. 99-F CHARGING LINE — Highly flexible. Makes extra close bends. Has Kwik-Kupler connection at both ends. One end is 45° elbow Sealgasket cannot be blown or dropped out. High burst-strength provides extra margin of safety.



NO. 189-F SERVICE VALVE KIT — Eliminates a separate valve for each hermetic unit. Valve equipped with wheel handle for easy operation. Gauge reads from 30 in. to 60 lbs., retard to 250 lbs. Contains 9 adapters, 6 wrenches, 5 gaskets, plus handy service data chart on cover.



NO. 330-C TAP-A-CAN VALVE — for dispensing canned refrigerant. Handy, positive-acting. Pierces can, and provides shut-off. For use on Charg-a-Can packaged refrigerant. Use just the refrigerant you need — save the rest for the next job.



NO. 341-C PIERCING VALVE — Taps line at any point. Can be used on 4 sizes. 3/16, 1/4, 5/16 and 3/8-in. O.D. tubing. Swivel anvil built into unit — cannot be dropped or lost

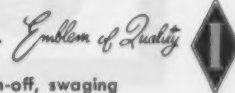
Ask your wholesaler for all the details on Imperial, or write direct for your free copy of Catalog 81.



THE IMPERIAL BRASS MFG. CO., 6300 W. Howard St., Chicago 31, Ill.—Dept. ACR117
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL

FITTINGS • VALVES • DRIERS • FILTERS • TOOLS FOR cutting, flaring, bending, pinch-off, swaging



For more information about products advertised on this page use Information Center, page 22.

Preview

Product Debuts To Be Spotlighted At Chicago Exposition Nov. 18-21

To Eye Pushbuttons

New developments in the push-button line and domestic pressure control will be spotlighted in booths 767-768 by Allen-Bradley Co.

In addition, the firm said, electric motor control applicable to air conditioning and refrigeration include manual and magnetic starters for both full voltage and reduced voltage applications and a complete line of pilot devices and accessories will be displayed.

Features Indicators

Allin Mfg. Co. will highlight its new 250 series "Liquid Eye" indicators in booth 662.

Other Liquid Eye indicators and related products will also be shown, the company said.

Name Plates Shown

American Name Plate & Mfg. Co. will display name plates, panels, dials, etc. for air conditioning and refrigeration equipment in booth 223.

Alloys, Fluxes Due

Silver brazing alloys and fluxes for manufacturing and installation of refrigeration and air conditioning equipment will be the center of attention in American Platinum Works' booth 744.

Also new black flux and complete line of materials for all phases of refrigerator brazing will be displayed, it was explained.

Headlines Mufflers

Discharge line mufflers will be outstanding item in Aminco Refrigeration Products Co.'s booth

207, the company has announced.

Oil separators, compressor suction throttling valves of standard and higher range, high side float valves, line check valves, loaded check valves, water strainers, constant pressure valves, and pressure-vacuum setting pumps will also be shown, the firm indicated.

Will Headline 2 Items

"Super Dry-Eye," combination moisture indicator and sight glass, and "T-Flo" drier-manifold and receiver-drier system will be headlined equipment in Ansul Chemical Co.'s booth 449.

T-Flo driers, "Freon" refrigerants, and Ansul oil will also be exhibited, the company said.

Electric Units Offered

New items of special interest in Arrow-Hart & Hegeman Electric Co.'s booth 232 will be 20 and 25 ampere 300-v. relays and 60 amp., 300-v. contactors and starters.

Industrial starters and contactors sizes 0 through 5, pushbutton relays, combination starters, and reduced voltage starters will also be shown.

Full-Vision Doors Due

"Servue" doors — self-closing "Tork" full-vision doors in king and standard size for set-in fronts — will be featured items in booth 542 by Barr Mfg. Co.

Tubing Highlighted

Among the items to be displayed in booth 545 by Bundy Tubing Co. are copper brazed steel tubing for refrigeration purposes, fabricated parts, condensers featuring use of "Bundyweld" steel tubing, and tubular compressor parts, the company announced.

To See Tube Benders

Tube bending and expanding equipment will be highlighted in Burr Oak Tool & Gauge Co.'s booth 523, it was indicated.

Wrought Iron Shown

A. M. Byers Co. will display colored photographs depicting the steps in making wrought iron in booth 711.

Product samples of wrought iron sponge ball, pipe, and plate and photos showing various installa-

tions where wrought iron pipe is used in air conditioning and refrigeration will also be shown, the company said.

Insulation Uses Set

New items of special interest in booth 756 include "Fastab," designed to increase the speed with which "Styrofoam" insulation can be applied to pipes, according to Dow Chemical Co.

In addition, several applications of Styrofoam low temperature insulation used for space refrigeration and equipment and pipe coverings will be shown.

Welding Outfit Seen

Linde Co., Div. of Union Carbide Corp. will exhibit in booth 319 its "Prest-O-Lite No. 420" oxy-acetylene welding and cutting outfit and molecular sieve adsorbents, it was announced.

Other items to be shown: air-acetylene appliances for soldering, heating, brazing; other oxy-acetylene welding and cutting equipment; acetylene small tanks; and oxygen and acetylene cylinders, it was noted.

Filter-Drier Offered

"Catch-All" filter-drier with new desiccant material to give increased moisture capacities, a 100-ton capacity solenoid valve for Refrigerant-12, and type 20 solenoid valve, capacity ratings 5 tons Refrigerant-12 and 7.5 tons Refrigerant-22, will be items of special interest in Sporlan Valve Co.'s booths 323-325.

Also thermostatic expansion valves, refrigerant distributors, solenoid valves, "Catch-All" filter-driers, strainers, "Level-Master" liquid level control, and crankcase pressure regulating valve will be shown, according to the firm.

Circulating Pumps Due

Newly designed line of double suction, horizontal split case pumps for hot and chilled water circulation in seven sizes will be spotlighted in Carver Pump Co.'s booth 145.

Headlines 3 Items

Highlight of booth 446 will be Mueller Brass Co.'s new refrigeration drier, liquid indicator, and pressure relief valve, the company announced.

Formed copper tubing, flare and solder fittings, and other refrigeration equipment accessories will also be shown, it was added.

Shows Electric Tools

Milwaukee Electric Tool Corp. will headline new electric hammers, Pittsburgh lock hammers, and "Sawzall" blades in booth 746, it was announced.

Has Special Flux

New items of special interest in United Wire & Supply Corp.'s booth 764 include "Black Label Sil-Flux," a special flux for silver alloy brazing at higher than normal temperatures and for brazing under conditions requiring longer heating, it was announced.

To Highlight Coupling

A new improved self-sealing coupling for Refrigerants 12 and 22 applications where quick or frequent connection and disconnection of refrigerant-carrying lines under pressure is needed will be headlined item in Aeroquip Corp.'s booth 641.

Along with that, flexible hose lines, detachable reusable fittings, and a "do-it-yourself" plastic working model of the self-sealing coupling will be displayed, the company said.

Insulation Line Seen

Mundet Cork Corp.'s full line of industrial insulation will be displayed in booth 721, according to the firm.

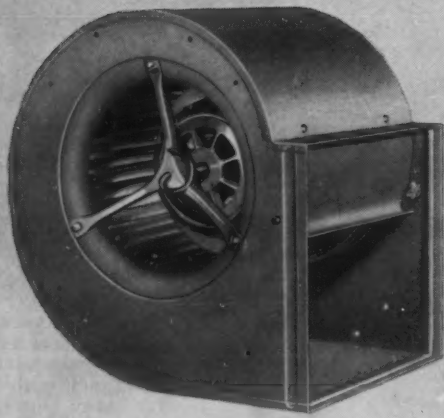
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Lau Engineering Leadership
on view at the
10th EXPOSITION, A.R.I.

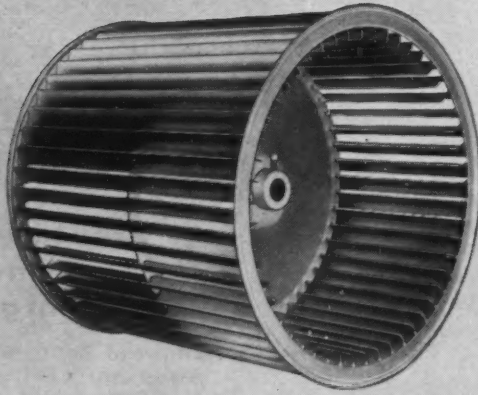
BOOTH 543



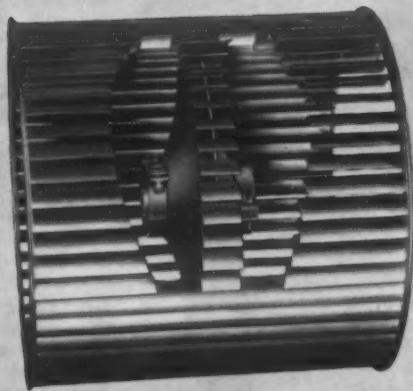
New product developments that are keeping Lau ahead of industry requirements... late news on finishes... forecasts of things to come from our Engineering Department: *You will certainly want to hear the latest news from Lau!* See us at Booth 543, Air-Conditioning and Refrigeration Industry, International Amphitheatre, Chicago, November 18-21.



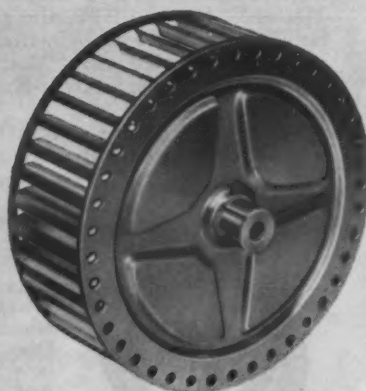
Electro-Wheel® Blower
The Lau exclusive, patented unit that delivers more air with less power load than ever before! See its advantages for yourself.



Preslok® Wheel. New, 18" dia. addition to this famed Lau family of wheels will be on view. Speeds at least 50% over catalog ratings are now possible!



Large-Bore Wheel. Now! a wheel applicable to shafting 2" to 4½" diameter. Hub is extruded from center discs for minimum weight.



Small Weld Wheels
Improvements in Lau 4" to 9" wheels, made possible by continuing field work, will be an interesting feature of our exhibit.



THE LAU BLOWER COMPANY

In Canada: The Lau Blower Co. of Canada, Ltd., Kitchener, Ont.

2027 Home Ave.
Dayton, Ohio
Azusa, Calif.

Carrier Div. Introduces Gas, Oil-Fired Boilers

SYRACUSE, N. Y. — Entry into a field which "accounted for \$80 million in heating industry sales in 1956" has been announced by the Unitary Equipment Div. of Carrier Corp., with its introduction of gas and oil-fired steel boilers.

Designed to supply steam or hot water for heating commercial buildings of moderate size, the boilers will expand the range of Carrier products available for year-round air conditioning installations.

"In this type of system a boiler may circulate hot water for winter operation to room equipment which uses chilled water for cooling," it was pointed out. "Or it may be connected to a unit which supplies warm or cool air according to the season from a central source."

In forced air heating, Carrier markets a full line of gas and oil-fired furnaces designed for easy adaptation to complete air conditioning, as well as a year-round system in a single cabinet, the company further pointed out.

Carrier Unit --

(Concluded from Page 1, Col. 4) will be located in a cabinet installed outside the house. It will chill water which will circulate through a coil located in the furnace.

In addition to lowering first cost, the new Carrier device is expected to reduce space requirements and simplify installation and servicing.

Carrier currently produces large capacity machines of this type powered by heat energy from steam or high temperature hot water for big building air conditioning.

'Biggest' Show --

(Concluded from Page 1, Col. 5) tions and technical societies are holding meetings either immediately preceding or during the time of the Exposition. (A Master Program of Events for the Show period is published on page 15 of this issue.)

Some 260 exhibitors will display their wares not only to industry representatives, but on the last day of the Exposition, to the public also. This will mark the first time that the public has been invited to view the displays, and will be limited to Thursday, the final day.



- Frozen food and ice cream display cabinets with automatic defrosting
- Milk and dairy display cases
- Ice cream storage cabinets
- Self-service frozen food display cabinets
- Wall type display cases
- Heavy-duty commercial upright freezers

ACE CABINET CORPORATION
358 Belleville Avenue, New Bedford, Mass.

Haverly To Move Mfg. Facilities --

(Concluded from Page 1, Col. 4) sidings on both the Pennsylvania and Reading Railroads capable of accommodating seven cars," it was noted.

"Haverly sales and production have more than doubled since the firm was acquired by John Wood Co. 18 months ago. During the same period, the Haverly sales and service organizations have been expanded to cover many of the major milk marketing areas in the United States.

"With increased production facilities available, the company is planning a number of new products for introduction."

In addition to bulk milk coolers, Haverly also manufactures farm milk can coolers, ice builders, and chilling units.

Formerly known as Haverly Electric Co., Inc., the firm was established in East Syracuse, N. Y. in 1921.

Carl Fehrman has been named district sales manager to head Haverly's Syracuse sales office. Fehrman has been a district representative for the company in New York State for many years.

The 150,000-sq. ft. Royersford plant will enable the Haverly Equipment Div. to meet the growing demand for its bulk milk coolers, the announcement said.

"In addition to more efficient layout and increased space, the new location will provide a complete metal fabricating press shop, truck dock facilities for six trailer trucks, and railroad

No Gas Refrigerator Decision Offered Yet

CHICAGO—A group of gas utility executives met here recently for a second round of discussions on what to do about continuing a gas refrigerator on the market now that Servel has left the field.

Following the two-day meeting no announcement was made of what decisions, if any, had been reached.

Some manufacturers apparently interested in producing a gas refrigerator attended the meeting.

Two firms, Norco of Los Angeles and National Gas Appliance Corp. of Chicago, have announced their intention of marketing a gas refrigerator. Norco would sell a unit imported from Germany and National Gas Appliance a box using components imported from Sweden.

Typhoon Names --

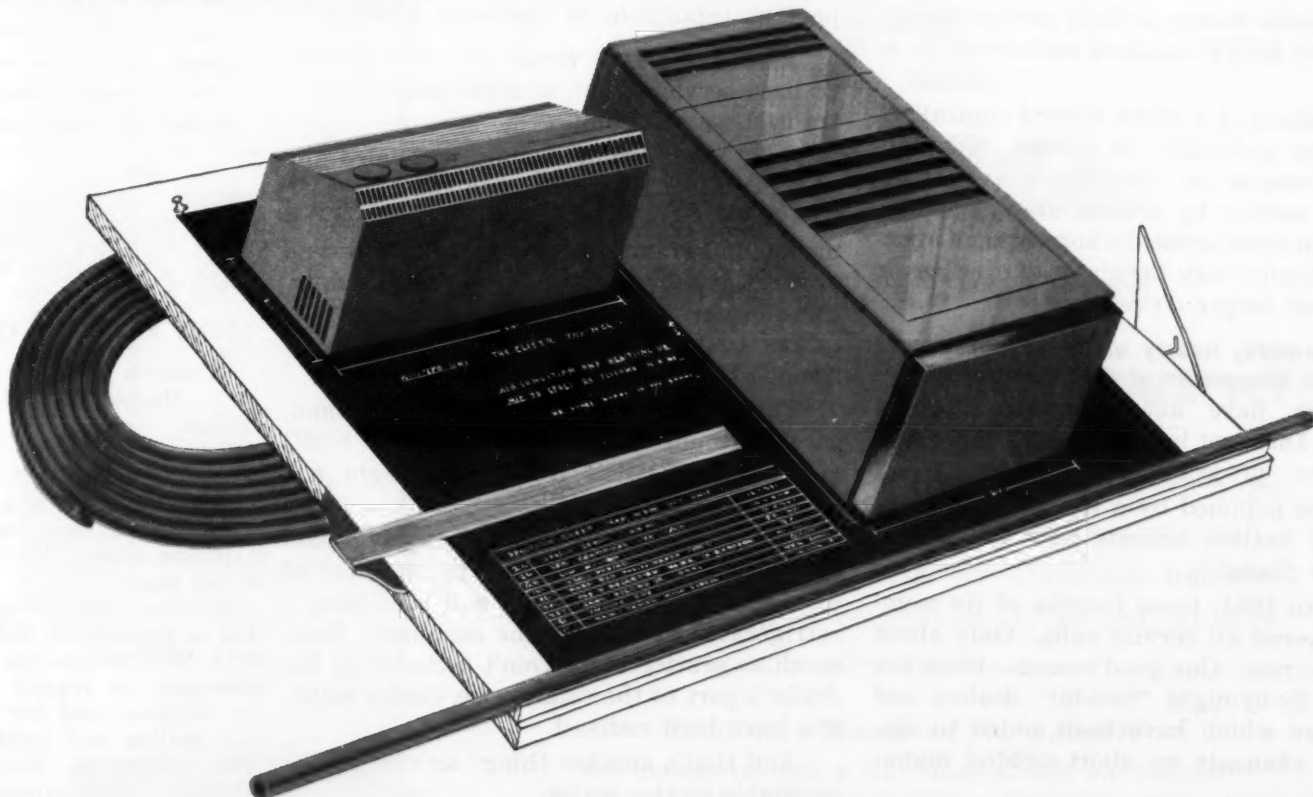
(Concluded from Page 1, Col. 4) for six years in field sales assignments. He also served for 13 years as manager of the Air Conditioning Div. of Servel, Inc.

For the past four years he has held the positions of manager, Packaged Products Dept., and manager, Wholesale Dept. of Westinghouse Electric Corp.'s Air Conditioning Div.

Gilbreath is a member of the General Standards Committee of the Air-Conditioning & Refrigeration Institute.

As a partner in Advance Appliance Co., Mooney will promote the sale of Typhoon conventional air conditioning systems as well as the Typhoon "Prop-R-Temp" heat pump. Advance Appliance is one of the nation's foremost distributors of Typhoon Heat Pump Co., also a division of Hupp Corp., according to Petrone.

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They'll
Do It
Every
Time

by
Jimmy
Hatlo



Moral for Manufacturers: Best Local Outlets Maintain Good Service Departments

IS THE CONTRACTOR or dealer who services "going by the boards," as some say? Of course not. The best dealers and contractors make money on their service departments, and KEEP satisfied customers by so doing.

Indications of a trend toward centralized service are noticeable, of course. Manufacturer advocates of this trend aver that, although service by dealers always will be required in rural areas, factory branch agencies eventually may do much of the repair work in our larger cities.

Furthermore, nearly all astute observers admit that thousands of dealers and hit-run contractors have abandoned the service function. Discount houses, for example. And caterers to "project builders."

Figures supplied by a major trade association of dealers indicate how the service picture is changing:

Prior to 1954, three fourths of its members answered all service calls. Only about 50% do so now. One good reason—there are so many fly-by-night "two-bit" dealers and contractors which have been added to distribution channels by short-sighted manufacturers.

Inadequate service is one of the annoyances which cause old customers to switch to another brand.

There is plenty of evidence that "repeat" customers rate service ahead of all other factors, including price.

Contrariwise, centralized service can be a money-maker for the big city dealer or distributor. Consider this comparison made by one manufacturer: If each of its 100 Chicago-area dealers had his own service department, he'd have to hire an average of three servicemen.

This would mean a total of 300 repair men in the area to take care of that manufacturer's business. Centralized service might require only 100 trained men. Another manufacturer figures the servicing cost of a local dealer amounts to 3.3% of sales volume, against 1.9% for a centralized operation.

These figures are subject to further interpretation and study, of course. Moreover, they do not take into account the important intangible of customer loyalty.

Also noted is a trend not only to centralized servicing but, in some cases, to centralized warehousing.

G-E, for example, has extended its factory-owned regional warehouse and service center systems along the lines of experiments undertaken earlier in certain urban areas, including New York. Eventually, these centers will make it necessary for retailers to hold only fractional inventories, some G-E planners aver.

That could come true. On the other hand, servicing dealers and contractors WHO EARN CUSTOMER LOYALTY might run rings around such folk.

Under the G-E idea a dealer will pass along the customer's order to the central distribution center—which will then ship a refrigerator directly to the customer. Inasmuch as service costs aren't included in the dealer's part of the retail price, dealer mark-ups have been reduced.

And that's another thing: service can be profitable to the dealer.

Just how extensive centralized servicing—and warehousing—eventually may become, no one knows for certain. But the trend to centralization is surely significant—and one that warrants the close attention of all concerned.

In the meantime, those locally strong distributors and dealers and contractors who maintain their own adequate service departments are being cultivated assiduously by practically every manufacturer in our business.

Why?

They OWN their territories, and thus they can supply "repeat" customers to the manufacturers they represent.

Until disproven, it's still a truism in our industry that distributors, dealers, and contractors who SERVICE adequately the products they sell have a leg up on the competitors who don't.

The function of play is to balance life in relation to work, to afford a refreshing contrast to responsibility and routine, to keep alive that spirit of adventure and that sense of proportion which prevents taking oneself and one's job too seriously.—Advertiser's Digest.

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'The Conscience of the Industry'

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VOLUME 82, No. 11, SERIAL No. 1,494, NOVEMBER 11, 1957

"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—John Walker.



SEEKS REVISION OF FHA-MPR-51 AS WELL AS ME-13

Research Products Corp.
Madison 10, Wis.

Editor:

Congratulations on the work you did with the FHA in regard to their ME-13. It is a good example of an excellent trade magazine working for the good of the trade.

However, don't stop at getting a revision of ME-13. The FHA MPR-51 has the same requirement in regard to filters for furnaces and for combination heating and cooling units. (See paragraph 504-B-3-e of MPR-51). This paragraph also limits the velocity through the filters to 300 f.p.m.

The American Gas Association recommendations concerning gas-fired furnaces does not require this, nor does Commercial Standard CS-195-57 for oil-fired furnaces require this, nor

can I find anything in the National Board of Fire Underwriters or Underwriters Laboratories specifications. The FHA and the ASHAE Guide stand alone on this. At this point I might correct Mr. C. W. MacPhee, who stated in your article that the ASHAE Guide does not specifically limit the filters to 300 feet per square foot of area. The ASHAE Guide does specifically state in Chapter 16, on page 422 of the 1957 Guide, that the maximum velocity should not exceed 300 f.p.m. 300 f.p.m. is the same as saying 300 c.f.m. per square foot of filter area.

Again I say congratulations on a good job. Keep up the good work.

DALE O. BENDER,
Chief Sales Engineer

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Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, heating, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only \$6.00 per year, 52 issues (U.S. and Canada). Foreign: \$10.00 per year.

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Preview

To See Parts, Supplies Innovations In Chicago Industry Show Exhibits

To View Refrigerants

Complete line of "Isotron" refrigerants and "Handi-Can" disposable refrigerant containers will be focal point of Pennsalt Chemicals Corp., Isotron Refrigerants Dept.'s booth 565.

Visitors will also see maps displaying 30 warehouse and 15 plant locations serving the refrigerant industry.

Starting Relay Set

R-B-M Div., Essex Wire Corp. will feature new potential starting relay, enclosed power relay, and air conditioning contactors in booth 221.

The firm also will show general purpose relays.

Compressor Opener Due

Hermetic compressor opener will be the center of attention in Frankell Mfg. Co., Inc.'s booth 165.

Offers Filter-Driers

"Genetron Super-Dry" refrigerants will be on display in booth 437 by General Chemical Div., Allied Chemical & Dye Corp., it was stated.

Included are Genetron 11, 12, 22, 113, and 114A.

To Draw Copper Tube

New equipment of special interest on display in booth 669 of Henry Valve Co. will be type V800 molded block filter-drier, "Abso-Dry" pressure-sealed driers and filter-driers, hermetic seal type liquid indicators, tubular glass type liquid indicators, and cast bronze "Y" strainers.

Other items to be displayed include packed and packless valves, relief valves, check valves, compressor valves, driers, strainers, liquid level gauges, and steel pipe fittings.

Eyes Transmission

Lewin-Mathes Co., Div. of Cerro de Pasco Corp. announces it will have on display a miniature draw-bench and will draw copper and brass tube from 3/8 to 1/4 in. o.d. in booth 770.

Copper and brass tube, pipe, and rod will also be shown.

Features Caulking

"Maureymatic" variable speed transmission will be headlined in booth 140 by Maurey Mfg. Corp.

Other items the firm says it will exhibit are fractional horsepower V-pulley line, heavy-duty QD sheave line, "Mor-Aire" high-pressure fans, "Silent Air" domestic fans, cast iron fan V-pulleys, and fractional horsepower V-belts.

Mufflers Introduced

"Bull Dog" filter-drier, suction accumulators, and 2 through 30-hp. mufflers are new items of special interest in booth 214, according to Refrigeration Research, Inc.

Also to be shown are "Deluxe" and "Blue Ribbon" heat exchangers, accumulator-driers and accumulators, Deluxe driers and strainers, cartridge strainers and strainer elements, and fabricated tube parts.

Show Cords, Gums

"Mortite" caulking cord and caulking gum will be special items shown in booth 732 by J. W. Mortell Co.

"NoDrip Tape," NoDrip plastic coating, "Insulmat" sealers, sound deadeners, and rust preventives will also be displayed.

Noise Absorbers Due

A new line of colored neoprene-in-shear noise and vibration absorbing mountings and pipe hangers will be highlighted in booth 637

by Vibration Mountings, Inc.

Vibration control and noise absorbing mountings and pads utilizing steel springs, cork, neoprene-in-shear, and combinations of these materials will also be displayed.

To Headline Motors

Rated NEMA frame motors and dripproof totally enclosed, fan-cooled and explosion proof motors will be highlights of Electro Dynamic Div., General Dynamics Corp.'s booths 233 and 234.

In addition, 150-hp. explosion proof motor will be shown, the company said.

Door To Be Shown

Sturdi-Lite Door Div., Parham Industries, Inc. will spotlight cold storage doors for cooler and free-

er rooms in booth 730. Hardware for use on these doors will also be displayed.

Sight Glass Viewed

Superior Valve & Fittings Co. will headline in booth 556 new "888" hermetic eye sight glass, a one-piece forged brass sight glass with hermetically fused glass windows; new ASME approved relief valves; and new heat exchangers.

Other items to be displayed include: "Tuffy" valves; standard line, angle, and globe valves; check valves; compressor, receiver, and cylinder valves; brass fittings; service tools and accessories; charging hoses and valves; sight glasses; driers, filters, and strainers; and valve and gauge manifolds, the company said.

Will Feature Driers

A complete new line of commercial driers will be featured display in Purolator Products, Inc.'s booth 622.

Driers, strainers, oil separators, mufflers, accumulators, receivers, and filters will be exhibited also.

To Show Insulation

"Vasco-Cel," a new line of closed cell tubular insulation for cold lines, will be special item of interest in Virginia Smelting Co.'s booth 549, it was announced.

Refrigerants in disposable cans, sealing compounds, water treatment chemicals for scale removal and scale and corrosion prevention, algaecides, and refrigeration oil will also be shown.

Eyes Plastic Blades

Plastic eliminator blades in various materials and forms will be new item of interest in booth 139, according to Southern Plastics Co.

Other items to be shown are corrosion resistant pipe and sheets of various plastics materials for use in chemical conduit as well as ductwork.

To See Capacitors

Oil and electrolytic capacitors and capacitor assemblies will be featured in booth 166 by Sprague Electric Co., the company said.

Has Finned Tubing

New "Readi-Fin" integral fin tubing for use in heat exchangers, condensers, heater coils, etc. will be highlighted in booth 103 by Reading Tube Corp.

Full range of copper refrigeration tubes, water tube, instrumentation tubing, etc. will also be shown.

Gaskets Spotlights

New equipment of special interest in booth 238 will be Jarrow Products, Inc.'s "Safeseal" gasket specifically designed for use with safety type spring and magnetic refrigerator door locks.

"Condenseal" closed cell sponge tubing for insulation on hot and cold lines and "Jarolac-1" rigid extruded plastic strips for sliding door channels and other bearing surfaces will be featured also.

Other items to be displayed include refrigerator and freezer door gaskets for all domestic and commercial refrigerators and freezers, "Curvall" replacement gaskets, and V-1212 vinyl plastic covered sponge gaskets.







A

Curtis

FRANCHISE

MAY BE THE ANSWER!

Curtis has been in business for 103 years and through experience has learned how to maintain a mutually profitable relationship with our franchise holders. Curtis equipment is competitively priced, quality built, and nationally advertised.

Visit Our Booth — No. 559-607

AIR CONDITIONING & REFRIGERATION EXPOSITION
INTERNATIONAL AMPHITHEATRE — CHICAGO — NOV. 18-21

LOOK AT THE CURTIS LINE

YOU CAN COUNT ON
REMEMBER...



INDUSTRIAL
AIR COMPRESSOR



AIR HOISTS
AIR CYLINDERS



AUTO LIFTS

Curtis

OUR 103rd YEAR

MANUFACTURING COMPANY

REFRIGERATION DIVISION

1912 Kienlen Ave. St. Louis 20, Mo.

Patterned after Calif. Plan

Pay-Later Contracting Service Aimed to Bring Homeowners Speedy, 24-Hour Repair Service of All Kinds In N.Y.

ROSLYN, L. I., N. Y.—For those homeowners who don't like to—or can't—repair items around the house themselves, a local entrepreneur has started a new service which assures householders of available repair maintenance, and renovating contractors around the clock.

Known as Allied Homeowners Association, Inc., it is patterned after a similar service in California. In addition, Arthur Yeckes, originator here, got the idea of billing members monthly for charges incurred from the Diner's Club.

Pay Small Dues

Members of the group pay \$10 dues the first year and \$5 each year thereafter. Their membership entitles them to call on the concern at any time of day or night when repairs are needed or at such time as they contemplate home improvements.

United Home Services, Inc. of Los Angeles, now beginning to show a little profit, has a simple mode of operation. Homeowners, apartment dwellers, and others pay United \$5 a year to supervise repair problems. Subscribers to the service call the firm when they want something done. United sees to it that a reliable repair man gets on the job quickly, inspects his work, and pays the bill.

Screen Contractors

Fourteen tradesmen-contractors, carefully screened for ability and integrity, who represent a cross-section of home maintenance trade work with Allied Homeowners. Included are appliance repairmen, electricians, plumbers, carpenters, roofers, masons, and television repairmen.

Offering speed and convenience, especially in emergencies, the home repair group sends a man at any hour whether or not there is any cash in the house. That, says Yeckes, is a major feature.

Homeowner Charged At Next Billing Date

Allied pays the contractor as soon as he renders a bill, but the homeowner is not charged until the next regular billing date. At present there are 400 members in most parts of Nassau county.

Yeckes emphasizes that the homeowner is assured that work is done satisfactorily and he is not overcharged under the Allied later-billing plan. The association, rather than the contractor, is the homeowner's recourse in the event he is dissatisfied with either cost estimate or work done.

Assures Work Is Done Well

If such is the case, Yeckes takes steps to renegotiate the price with the contractor or to bring him back to do the work properly.

However, Yeckes insists such situations are unlikely because Allied is in a position to provide contractors with a large volume of work, and it is to the tradesmen's advantage to provide the

best possible workmanship at the lowest reasonable cost.

Even with this central service, the homeowner is free to deal with contractors sent by Allied. He receives a cost estimate and an explanation of what has to be done. If there are any doubts, he can hold the work in abeyance until he can consult with Yeckes or his staff.

Allied plans to widen its scope to more than 200 different services and expand over all of Long Island. Such services as baby-sitting, snow-shoveling, etc., are contemplated.

Last year, California's United plan received 14,652 calls for assistance from 3,664 of its over 7,000 clients. United encourages subscribers to handle small

jobs for \$5 and less themselves, so about half the clients didn't use the plan.

Makes Money from Commissions

Under this setup, the client pays United exactly the full amount of the bill. The plan makes its money not so much from members' fees as from commissions received from contractors for its repair "sales" and its prompt bill-paying. Commissions run to 10% of the bill on amounts under \$1,000 and 7½% on amounts above that.

With some 700 firms in different repair lines on its roster of reliable contractors, United constantly finds new companies or drops some if they fail to meet standards. Also, there is a move to franchise "dealers" throughout the nation to put United's system into practice. The originator would aid dealers with literature, local advertising, and a training program for employees.

"Advertising is particularly important," it was stated, since our own number one problem is getting started was in convincing people we were on the level."

SENSATIONAL NEW RANCO SOLVE TOUGH HEAT

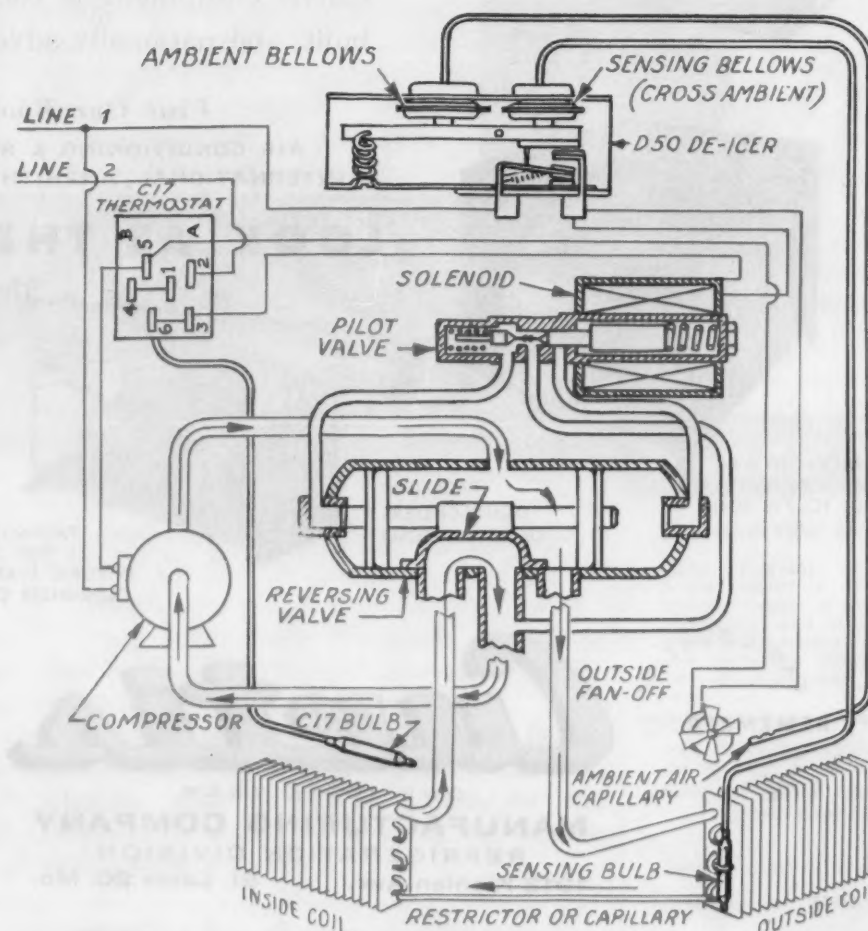
Nothing has held up heat pump success more than the lack of suitable automatic controls. Now, with a control system from Ranco centered around a sensational new de-icing control, you can offer absolutely automatic heat pump operation in a much larger geographical area than ever before and for both window and central systems.

The Automatic De-Icer. Newly-developed Ranco D50 and D52 De-Icer Controls are the *only* controls which detect coil ice quickly and automatically. Efficiently simple, D50 and D52 are actuated solely by the presence of ice on the outside coil. Operation is based upon increases of differential between ambient outside air and the outside iced coil as compared to a clear coil. "Spread temperature" for initiation of the de-icing cycle is adjustable on both controls, making them adaptable for all types of air conditioning and climate conditions.

The Reversing Valve. New Ranco V25 and V26 Slide-Type Reversing Valves have many desirable features fitting them specifically to heat pump operation. No metal-to-metal contact minimizes wear due to dirt and corrosion, reduces friction. Nylon transfer slide is a thermal insulator reducing heat exchange. Mid-stroke stops are eliminated, and a bypass prevents overloading of compressor. Adaptability is insured by range of capacities through 7½ tons, solenoids at 24, 115, 208 and 230 volts and 50 or 60 frequency cycles.

The Cycling Control. Ranco C17 Thermostat Control provides completely automatic, combination heating-and-cooling cycling control. Responds to room temperature, starts and stops compressor on temperature demands and actuates the reversing valve. Varied wiring schemes permit C17 to control strip and step heaters used in conjunction with the heat pump.

ABSOLUTELY AUTOMATIC OPERATION



DE-ICING PHASE (Heating and Cooling Phases Not Shown)

HEATING PHASE—Pilot valve solenoid is energized causing pressure differential to move slide in reversing valve to right, removing heat from the outside coil and causing a build-up of ice. As the ice accumulates, heat exchange between coil and ambient air is reduced, lowering refrigerant temperature.

DE-ICING PHASE (Diagram at left)—This increase in spread temperature over the clear coil temperature is sensed by the cross ambient bulb to set the de-icer in action. Temperature drop moves rocker arm which opens switch to stop outside fan and de-energizes pilot valve solenoid. Right port of pilot valve closes, pressure moves reversing valve slide to the left transferring heat in unit to the outside coil. In 3-5 minutes, all ice is removed and coil temperature increases rapidly expanding bellows and closing switch that terminates de-icing cycle, starts fan motor and re-energizes solenoid to return unit to heating phase.

COOLING PHASE—Limited vapor charge in the ambient air element immobilizes De-Icer Control contacts in closed position at ambients above 48°F, permitting fan operation through the De-Icer Control. Cooling is thus achieved by the same refrigerant flow as in de-icing, and the compressor is operated by temperature demands of the C17 Thermostat.

ARI Booklets Show 'Vital Part' In U.S. Air Conditioning, Refrigeration Play

WASHINGTON, D. C.—Two booklets have been prepared by the Air-Conditioning & Refrigeration Institute for distribution to the public on the final day of the 10th Exposition of the Air Conditioning and Refrigeration Industry at Chicago's International Amphitheatre, it was announced by George E. Mills, show director of the institute.

This year for the first time,

the Exposition will be opened to the public for one of its four days—Thursday, Nov. 21. It was felt by the Exposition Committee that inviting the public to attend on this final day would enable the exhibitors, particularly of the end-use products, to meet their ultimate customers, and that the innovation would provide an opportunity for on-the-spot market research, ARI noted.

The two booklets are titled "YOU and Air-Conditioning," and "YOU and Refrigeration," ARI indicated.

"They portray the vital part played by air conditioning and refrigeration in America's life today, and the impact they have on the daily activities of nearly all Americans," it was pointed out.

The booklets will be available at the ARI exhibit booth, where the functions of the institute and its direct relationship with the industry will be delineated in a 40-ft. display, it was explained.

Detroit Heating Men To Hear Credit Talk Nov. 14

DETROIT—Words of advice on "Credit and Collections" will be offered to members of the Detroit Warm Air Heating Association on Nov. 14 by Herbert Brocklebank, owner-manager of the Michigan Merchant Credit Association, the association announced.

The warm air group will meet in the Fort Shelby hotel for dinner at 6:30 p.m. and for business at 8 p.m., it was indicated.

Viking Copper Appoints Higham Director of Mfg.

Higham, 36-year-old British metallurgical engineer, has been named director of manufacturing of Viking Copper Tube Co. here.

Viking has had tremendous success with the "Bull Block" technique of

drawing copper tubing, which Higham helped develop for the Metals Div. of Imperial Chemical Industries, Ltd., one of England's giants of industry, it was further pointed out.

Starting in 1936 as a junior assistant in the inspection and test room at The Broughton factory, Higham rose to the position of operations manager and deputy factory manager at ICT's Kirkby factory.

During his 20 years with ICI, he helped develop, plan, and design new loading, drawing, and production techniques for the fabrication of thinwall copper tubing. In 1952, he played a major part in the development of an ultra-modern tube mill at Kirkby and the establishment of the automated production methods in that plant.

Higham has authored several papers applying to the field of high speed drawing of copper tube on "Bull Blocks" and on triple-draw benches.

At Viking, Higham will take an active part in the development of new processes and machinery.

His activities are expected to expedite Viking's long-range expansion program.

AAF Sales School Runs Nov. 11-22

LOUISVILLE, Ky. — American Air Filter Co. will conduct a two-week sales school for new sales engineers who have recently joined the field organization.

It will be held Nov. 11 through Nov. 22 at the firm's home office, 215 Central Ave. Thirty-five are expected to attend.

According to C. A. Pickett, sales manager, the course is designed to improve sales techniques and product knowledge of the individual salesman.

John W. Frazier, sales promotion manager, will direct the school.

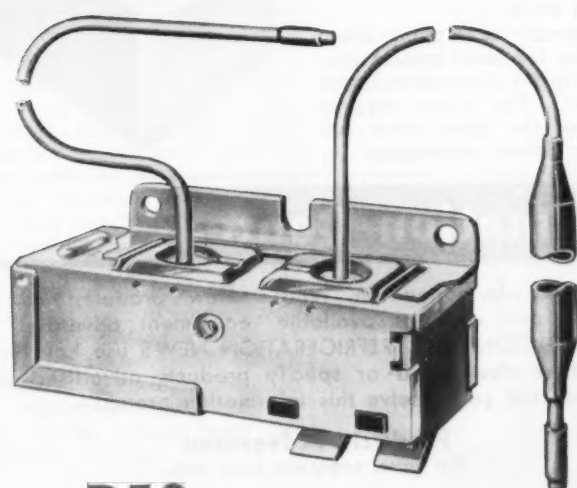
Mitchell To Introduce '58 Room Conditioners Nov. 18

CHICAGO—Mitchell Mfg. Co. will introduce its 1958 room air conditioner line with individual marketing conferences with distributors in Chicago beginning Nov. 18.

Mitchell officials feel that this kind of line introduction which is new to the company will be much more productive than large regional meetings because it will give them the opportunity to shape their marketing plans to the individual requirements of the distributor's marketing area.

CONTROLS AND VALVES PUMP PROBLEMS!

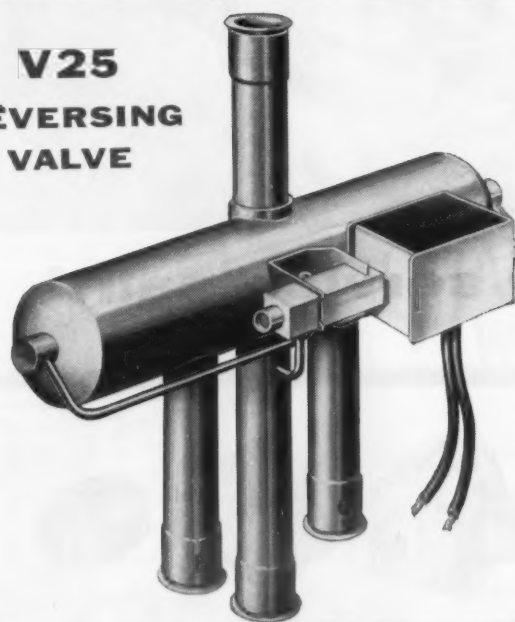
Completely Automatic De-icing Control New Slide-Type Reversing Valve Automatic Cycling Control



D50
DE-ICER CONTROL

SIMPLICITY—operates solely due to presence of ice on external coil. **PROTECTIVE MOUNTING**—two capillaries permit mounting of control in weather-protected chamber. **COMPLETE CONTROL**—ambient power element action not effective above 48°F. Sensing bulb, along with the ambient power element, gives complete control at coil. Switch action of D50 is S.P.S.T. with S.P.D.T. action available in the D52.

V25
REVERSING
VALVE



NO METAL-TO-METAL CONTACT—less wear from dirt and corrosion. **PRESSURE DIFFERENTIAL OPERATION**—eliminates mid-stroke stops. **NYLON TRANSFER SLIDE**—less friction, minimum heat exchange. **SPECIAL BYPASS**—prevents compressor overload during transfer period. **HERMETIC CONSTRUCTION**—single solenoid pilot valve integral with main valve. **ADAPTABILITY**—capacities through 7½ tons. Solenoids available in 24, 115, 208, 230 volts with 50 or 60 frequency cycles.

Free Booklet!

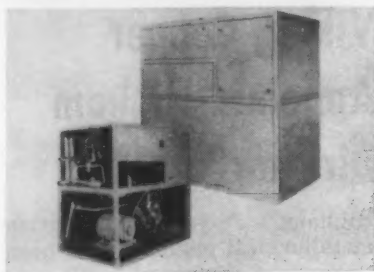
Write for free detailed Booklet #1637 or contact Ranco to see how these amazing new controls and valves can help solve your heat pump problems.



Ranco
INCORPORATED

COLUMBUS 1, OHIO

What's New



Introduces Central Packaged System

—KEY NO. G-1120—

W. HARTFORD, Conn. — The "CPU," a packaged air conditioning unit, has been introduced by Dunham-Bush, Inc.

A pre-engineered central station air conditioning system, the CPU is completely self-contained, housing an evaporator, compressor, evaporative condenser, fans, motors, refrigerant piping, and controls in a grey enamel casing. All components are enclosed.

A summer-winter conditioner,

the CPU unit also functions as an evaporative condenser water-saver. This sturdy, compact assembly is available in five sizes: 10, 15, 20, 30, and 40 ton.

Adds Home Hot Water Boiler

—KEY NO. G-1121—

POMPTON PLAINS, N. J. — Spi-Rol-Fin Corp. has announced a complete residential hot water boiler package featuring zone control valves, expansion tank, automatic air elimination, and plug-in electric wiring, fully pre-assembled and pre-wired.

Motorized zone control valves operate quickly and quietly in less than 10 seconds to provide comfort conditions throughout modern split-level and rambling ranch dwellings. No electrical current is drawn to hold the



valves after they are opened or closed upon signal from the controlling thermostat which also turns on the burner and pump.

Expansion tank is engineered to match the system capacity and is dimensioned to fit inconspicuously between joists. Mounting lugs are provided on the tank to simplify and speed installation. Connecting tubing with a quick-fastening compression fitting is supplied for connection of the tank to the boiler.

Offers Strip Coating

—KEY NO. G-1122—

MILWAUKEE — A new type of strip coating called "Strip-Kote" has been developed by Chemical Consulting Service.

Strip-Kote is a high solids, milky colored, plastic emulsion which when dry gives a transparent, tough film for protecting smooth and wrinkled metal finishes, plastic, marble, porcelain, and glass surfaces from being marred or scratched during processing, shipment, or storage.

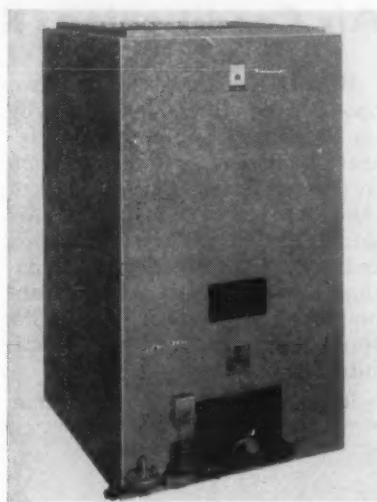
Gas-Fired Gravity Furnace Line Announced

—KEY NO. G-1123—

NEW YORK CITY — American Standard Air Conditioning Div. has announced four new gas-fired gravity furnaces ranging in size from 90,000 to 145,000 B.t.u. input.

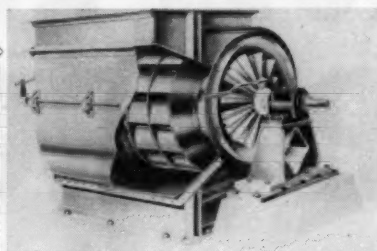
Known as model GG, these new gravity furnaces incorporate a single port up-shot burner, easily accessible front clean-out plate, and have a metal bottom pan for dust-tight enclosure. All heated areas have 1/2 in. thick foil faced glass fiber insulation. The two smaller sizes come completely assembled.

This compact furnace requires a minimum of floor space. The 110,000 B.t.u. model occupies 28 in. by 28 in. and stands just 55 1/2 in. high. All units come equipped with thermostat, gas pressure regulator, pilot valve, and draft hood. Optional limit control, humidifier,



and day-night thermostat are also available.

Mechanical Draft Fan Features Airfoil Wheel



—KEY NO. G-1124—

FRANKLIN PARK, Ill. — A new airfoil mechanical draft fan for

central power stations and heavy industrial service has been announced by the Chicago Blower Corp. here.

Engineered around an airfoil backward curved non-overloading type centrifugal wheel, the fans give mechanical efficiencies up to 92%, the company says.

The fan's hollow section airfoil blades are designed on the same principle as an airplane wing. Smooth passage of air over the blade surface eliminates eddies.

Condensate Removal Pumps Made of Aluminum

—KEY NO. G-1125—

WARMINSTER, Pa. — Hartell, Inc. recently announced a new line of automatic, cast aluminum pumps for condensate removal which provide a number of unique, money-saving design features.

Known as the "Centriflow" line, the pumps are available in two sizes for either 115-v. or 230-v. operation. Model A-1 pumps to a height of 10 ft., and model A-2 to a height of 20 ft.

The integrally cast pump housing with the top inlet system provides a sump for the accumulation of sediment. The pump requires no seals and the liquid level control is completely automatic.



"What...another service call!"

Don't risk profit-stealing callbacks. Rest easy with customer-engineered **A. O. Smith** motors

What happened in the case above — motor failure? In any case, the result is a costly, inconvenient callback.

But what caused the motor failure — switch trouble . . . bearing burnout . . . overload or voltage drop? You can't tell which until you get there. And in the meantime you're losing sleep and money!

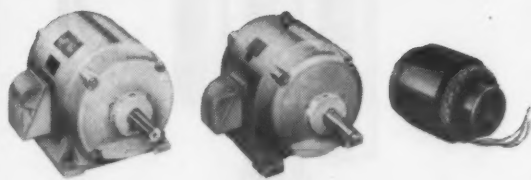
Avoid these troubles with A. O. Smith motors. They're specifically built for blower, exhaust and ventilating fan or compressor duty. Here are just a few of the reasons it pays to specify A. O. Smith motors —

1. Exclusive, totally enclosed starting switch eliminates chance of fouling.
2. Higher maximum operating torque and superior insulation combat overload effects.
3. Mechanical design provides higher safety factors.
4. Part-winding start motors have extra "oomph" or starting torque to kick over compressors, offset low voltage conditions.

And for your convenience, A. O. Smith maintains a nationwide network of over 300 top-flight service stations — ready to provide fast action on parts or repair.

P.S.

Rest easy. Be sure the equipment you install features customer-engineered A. O. Smith motors — the motors that take the beating and leave the profit to you!



1/3 TO 800 HP

SINGLE-PHASE MOTORS — 1/3 to 5 hp — meet old and current NEMA frame sizes.

POLYPHASE MOTORS — 1/3 to 800 hp — choose from drip-proof, TEFC and explosion-proof models.

HERMETICS — 3/4 to 100 hp — in single and polyphase models.

Through research  a better way

A.O. Smith
CORPORATION
ELECTRIC MOTORS
Tipp City, Ohio

A. O. Smith International S. A., Milwaukee 1, Wis., U. S. A.

Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in **AIR CONDITIONING & REFRIGERATION NEWS** use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertiser

(list name, page, and issue date)

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What's New or Current Literature Available

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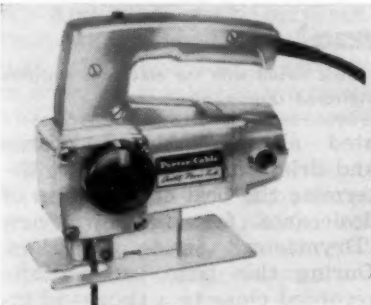


Develops Heated Display Case

KEY NO. G-1126
MILWAUKEE—Now food service establishments can keep pies, sweet rolls, sandwiches, etc. warm with a heated display case now marketed by Lern, Inc., the company announced.

Called the Lern "Heated Display Case," this new display merchandiser offers as one of its outstanding features, humidity control, which prevents dehydration and drying out of foods. An easily adjustable heat control is also provided, with a temperature range of 90° to 150°, for varying heat requirements.

No special wiring is necessary, just plug the unit in and it operates. Both counter and wall models are available. All are self-contained and provide plenty of storage space.



Has Low-Priced Electric Saw

KEY NO. G-1127
SYRACUSE, N. Y.—A new low-priced electric hand saw has been introduced by the Porter-Cable Machine Co.

This tool is actually seven saws in one—a rip saw, cross cut saw, coping saw, key-hole saw, scroll saw, jig saw, and hack saw. It cuts hard and soft woods, plywood, laminated plastics, compositions, ferrous, and non-ferrous metals.

High performance of the model 152 electric hand saw results from orbital action of the blade in which the blade teeth are in contact only on the up or cutting stroke and back away on the relief stroke. This blade action eliminates dulling "drag," blade breaking, heat, and friction, giving longer blade life and efficient cutting.



- ◆ Extra-large storage
- ◆ Safety from freeze-up
- ◆ Fast hourly recovery
- ◆ 20-year life construction

Capacities: 5 to 500 g.p.h.
Storage: 2 to 240 gals.

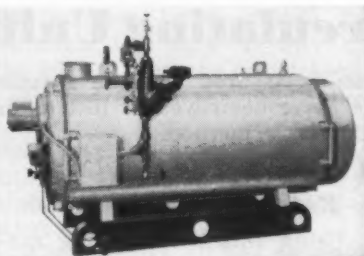
Water coolers for all uses factory-packaged with your condensing unit. Write for literature.

FILTRINE MFG. COMPANY
216 W. PROSPECT ST. • WALDWICK, N. J.

Packaged Boiler Eliminates Need for Chimney

KEY NO. G-1128
MILWAUKEE—Cleaver-Brooks Co. has just announced the new "Monitor" packaged boiler.

The Monitor boiler eliminates the need for a chimney. A simple vent removes any combustion gases from the boiler room. The unit is fully automatic in operation. The package is completely factory assembled and tested, thus assuring the owner of complete satisfactory operation from the start. The boiler is available



through 60 hp. or 2,070 lbs. of steam per hour and can be fired with oil or gas or a combination.

Trowelable Mastic Bends Plastic Foams

KEY NO. G-1129
BLOOMFIELD, N. J.—A new high strength, quick-grab, fast-drying, trowelable mastic for bonding "Styrofoam," "Dylite," and similar rigid and semi-rigid plastic foams to themselves and to other materials such as wood, metals, etc., has been announced by Rubber & Asbestos Corp.

The new product, "Bondmaster G458," incorporates a special sol-

vent blend to minimize or eliminate cell collapse due to attack on the surface of the foamed styrene.

Introduces Medium-Pressure Welding Blowpipe

KEY NO. G-11210
NEW YORK CITY—The "Ox-weld W-47 Blowpipe," a new medium-pressure welding blowpipe capable of welding any metal thickness from 28 gauge to 3 in. and handling heating jobs requiring total gas flows up to 1,500 cu. ft. per hr., has been introduced by Linde Co., Div. of Union Carbide Corp.

New W-47 handles any oxygen or acetylene flow from 2 to 300 cu. ft. per hr. A simple change of welding heads quickly converts the new blowpipe from light-duty

welding and brazing to heavy-duty welding or heating. This feature enables the W-47 to handle a range of work normally requiring two or more blowpipes. A convenient cutting attachment equips the blowpipe for flame cutting on metal up to 8 in. thick.

Adds 2 Flexible Duct Connections to Line

KEY NO. G-11211
CHICAGO—Two new flexible duct connections recently have been added to the "Flexi-Duct" line manufactured by Grant Wilson, Inc.

The new Flexi-Duct type C-6 and type C-10, for use on the "cool" side of heating and air conditioning systems, are made of

heavy woven canvas fabric. Flexi-Duct tape is claimed to have the ability to dampen noise and vibration in all types of heating, cooling, and ventilating equipment. Used on blower, furnace and plenum joints, on take-offs and main or branch duct systems, Flexi-Duct prevents the duct from becoming a "noise conductor."

NOW...USE ONLY ONE WATER VALVE FOR BOTH R-12 and R-22

New Penn 246 ALL-RANGE Water Valve

Here is the refrigeration industry's favorite water valve... the Penn 246... in a new ALL-RANGE model making it suitable for both R-12 and R-22 service! Your inventory is reduced yet you'll always have the right model on hand.

And remember, you get the same dependable features that have made Penn 246 water valves stay on the job longer... no valve chatter; no water hammer; no corrosion of sliding parts because water never touches them; easy manual flushing; highly sensitive yet accurate. Available in 3/8", 1/2" and 3/4" sizes.

Don't settle for something "almost as good"... specify Penn ALL-RANGE water valves.

Ask your wholesaler or write Penn Controls, Inc.

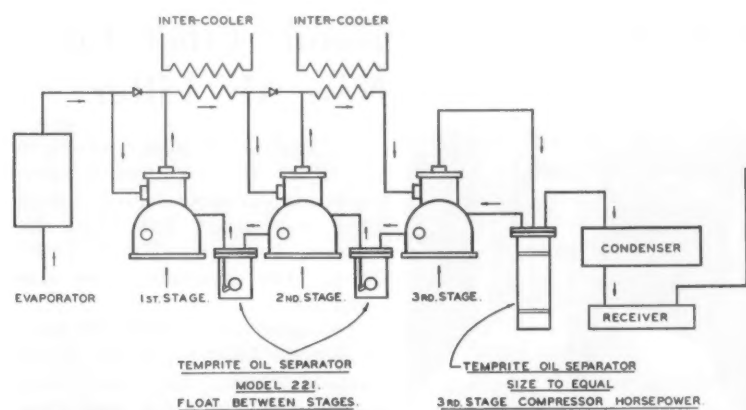
PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

For more information about products advertised on this page use Information Center, page 22.

23



TO INSURE adequate oil separation and flow in a three-stage system, Temprite Products Corp. now recommends use of only one actual oil separator and two float valves. Oil separator is mounted on the discharge line of the high-stage compressor. Return line from the separator leads to the crankcase of the same unit.

Urges Use of One Oil Separator, 2 Float Valves In Compressor Series

BIRMINGHAM, Mich.—With the increasing use of multi-stage compression systems for low temperature requirements, oil separation has become a major consideration. Pointing out that oil entrained in the discharge gas of the low-stage compressor enters the suction line of the intermediate and high-stage compressors, James W. Archibald, sales manager, Temprite Products Corp. added that it is impractical to attempt to equalize crankcase pressures when two or three compressors are in series.

To insure adequate oil separation and flow in a three stage system, as an example, he advocates use of only one oil separator and two float valves.

The oil separator is mounted on the discharge line of the high-stage compressor. The return line from the separator leads to the crankcase of the same high-stage compressor.

Between the low-stage and intermediate-stage compressor, then again between the intermediate-stage and high-stage compressor, is mounted a float

valve. In the closed position these float valves maintain the pressure differential which exists among the three compressors. Adequate lubrication is

provided by virtue of the relative height of the float valve, the position being chosen to maintain the desired level in the higher pressure crankcase.

As the oil in the high-stage compressor rises above the desired level, it flows by gravity into the float valve between the high-stage and the intermediate-stage unit.

When enough oil has accumulated, the changed float position opens the valve, and the pressure difference between the two compressors forces the oil to the lower stage compressor. This same thing, of course, happens when oil in the intermediate-stage compressor rises too high.

"Let's keep the oil where it belongs," says Archibald, and in the typical installation just described, Temprite would use an oil separator to equal the high-stage compressor horsepower, and two of their model 221 high-side float valves to keep the oil where it belongs.

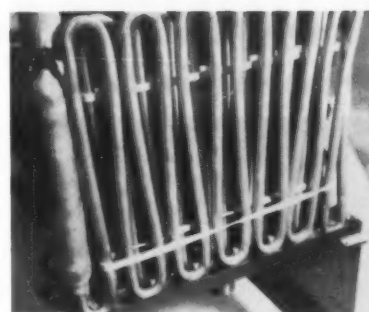


FIG. 1—Close-up comparison of the old hand-bent method. . . .

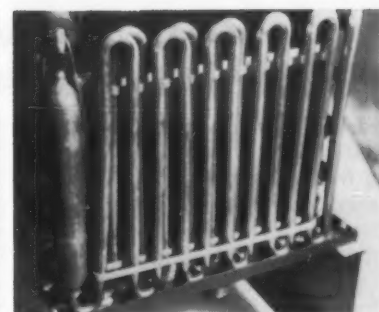


FIG. 2— . . . as compared to the new tube bending machine method.

Tube Bending Machine Improves Coil Bend Condition, Performance

COLUMBUS, Ohio — Recognizing that the condition of the bends in a coil has an important bearing on the flow of refrigerant gas and on the speed of condensation and water removal, the Ebco Mfg. Co. here has installed a new tube bending machine.

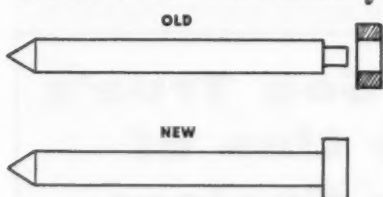
The new machine makes it

possible to produce 23 uniform bends in 3/8-in. copper tube for coils used in Ebco's "Oasis" and "Kelvinator" dehumidifiers.

In addition to improving the performance of the coils, the use of the new tube bending machine makes possible savings in time, labor, and material, according to Ebco.

Solenoid Valve

Cold Form Needle Lifting Collar Ups Unit Serviceability



OLD WAY and new way to make pilot needle for solenoid valves. Now the entire stainless steel needle and lifting collar is formed from a single cold formed part.

CHICAGO—Increased serviceability of solenoid valves has been obtained by simply changing the method of manufacturing the pilot needle at Refrigerating Specialties Co. here.

Since the pilot needle undergoes repeated impact during valve openings, its strength is quite important, and this strength has been doubled by forming the entire stainless steel needle and lifting collar from a single cold formed part. Previously, the part was fabricated by machining the needle and the collar separately.

According to Refrigerating Specialties, cold forming increases the strength by improving the grain flow structure of the metal, the new fabricating method reduces cost.

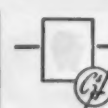
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Wolverine Trufin is available in Canada through the Unifin Tube Company, London, Ontario.

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Air-to-Air Heat Exchanger Halts Sea Corrosion, Absorbs Shock Load

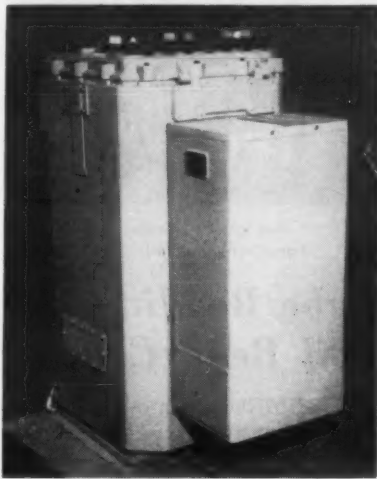
LOS ANGELES—The United States Navy is taking delivery on 642 especially built air-cooler assemblies being built for Bendix Aviation Corp. Pacific Div. by Drayer-Hanson, reports C. W. Pollock, manager of Drayer-Hanson's Air Conditioning & Refrigeration Dept.

The air-to-air heat exchangers are to be used on the Range Azimuth Indicators of the Navy's SPA-4B, and are designed to replace original motor-operated valves which took in sea air for cooling the tubes and other electrical components of the unit.

Because the sea air actually passed over all of the operating components, corrosion and malfunctioning were common, stated Pollock. Requirements called for a heat exchanger which would handle the temperature load, correct the corrosion problem, be light in weight, and have the ability to take shock loads.

Drayer-Hanson designed and engineered the new air-to-air heat exchanger which cools the remote indicator, permitting hermetic sealing of the entire unit. The equipment is housed in an extension of the remote indicator cabinet.

Air tubes are built into the hermetically sealed unit. Air is drawn through the tubes and heat from the device is dissipated without introducing air into the equipment.



NEW Drayer air-to-air heat exchanger is housed in an extension of remote indicator cabinet on Navy's SPA-4B.

A blower mounted below the tube area draws air in at the top of the unit through a louvered intake. Air is drawn down through the tubes of the heat exchanger; the tubes themselves actually pass through the hermetically sealed area of the equipment, the company explained.

Thus, air enters the top of the heat exchanger and exits at the bottom. The blower is below the air tubes. An access plate is provided for easy servicing. These elements are outside of the sealed area of the remote indicator, allowing servicing without interfering with the indicator.

Ultraviolet Lamp, Set In Ducts, 'Kills 80% of Airborne Viruses'

BLOOMFIELD, N. J.—A new ultraviolet "death lamp" claimed to destroy up to 80% of airborne bacteria and virus, has been developed here by the engineers of the Westinghouse lamp division.

The lamp, which can be inserted into air conditioning or heating ducts, is especially effective in killing influenza virus, the company claims.

Known as Sterilamp G10T5½, the new ultraviolet lamp produces a radiation which is about 100 to 1,000 times more effective in killing micro-organisms than an equal amount of ultraviolet radiation from the sun," according to Edward G. F. Arnott, director of research for the Westinghouse lamp division.

Westinghouse is cooperating with hospital and public health authorities to test the effectiveness of ultraviolet lamps in combating the new Asiatic influenza virus. "While we know it is effective in killing other types of influenza virus," Arnott said, "we want to discover its exact effectiveness upon this new virus strain."

Simply installed in air ducts, the Sterilamp can be used in operating rooms to prevent infection, in schools to reduce respiratory infections among children, and in the home where almost 100° of air-borne bacteria can be destroyed during normal recirculation of the air.

A number of manufacturers already have fixtures available to hold the lamp in the duct. In addition, several furnace and air conditioning equipment manufacturers are planning to make an ultraviolet germ-killing unit available as optional equipment on their 1958 units, reported Arnott.

Another important advantage of the lamp is that it has a substantial deodorizing effect upon the air, making it ideal for use in window air conditioners and room heating units. The germ-killing action of the G10T5½ Sterilamp tube should make it advantageous to commercial and industrial establishments in reducing absenteeism in any public building where concentrations of people occur, says Westinghouse.

The G10T5½ Sterilamp tube has an over-all length of 14¾ in. including base pins. Of the hot cathode, Slimline type, the lamp has a rated life of 7,500 hours. The new lamps will be available this fall.

Automatic ZincPlating Set In Wall Tube Plant

NEWPORT, Tenn. — Wall Tube & Metal Products Co., a company formed from the merger last summer of Wall Wire Products and Helical Tube Corp., is now located in a new factory here with approximately 100,000 sq. ft. of space devoted to production of seamless and welded stainless steel tubing.

Also made are wire and tube condensers, evaporators and evaporator shelving, and miscellaneous assemblies.

Incorporated in the new building is a fully automatic zinc plating setup along with electrostatic paint equipment.



ULTRAVIOLET lamp which is claimed to set up a barrier of death to bacteria, virus, and molds has been developed by Westinghouse Electric Corp. Lamp Div. engineers. Dr. Rudolph Nagy holds laboratory Petri plates containing bacteria samples. Plate at left was exposed to contaminated air which had passed through a duct containing an ultraviolet lamp.

Bonds Fiber for New Air Filter

CHICAGO—A new concept in air filters for air conditioners, warm air furnaces, and air handling equipment has been developed here by Fiber Bond Corp., the manufacturer announced.

Produced of bonded "Dynel," an acrylic fiber made by Union Carbide Corp., the new filter media is designed for easy handling, greater dust holding capacity, and long life, the company said.

Fiber Bond's filters are made in either permanent washable, semi-permanent "Revac," or throwaway. There are also low cost metal frames for all types and sizes and all filters can be fabricated to any given dimension and are adaptable to original equipment manufacturers, the producer further pointed out.

Integral Finned Tubing Reduces Costs and Conserves Space

NEW YORK CITY—Reduced costs and space savings can be realized by the use of integral finned copper or red brass tubing, relates Joseph F. Murray, general sales manager of Reading Tube Corp. The tube, which can be supplied either with internal or external fins, can be tempered and formed into very small coils, giving a maximum of surface for heat transfer while only requiring a small jacket, the official further explained.

Since there is no foreign bond or film between the fin and the tube, there is no lowering at all of the coefficient of heat transfer of the tube, states Murray. The inner integral fins are provided where it is desired to promote a bit of turbulence in order to prevent the formation of stagnant films which could tend to reduce operating efficiency of the unit, he indicated.

"Readi-Fin Tube" integral finned tubing is supplied with

ceptance in air conditioning, and the 11 and 14 fin tube are popular in the manufacture of water heaters, according to Murray.

11, 14, or 19 fins per inch. The 19 fin tubing is gaining rapid ac-



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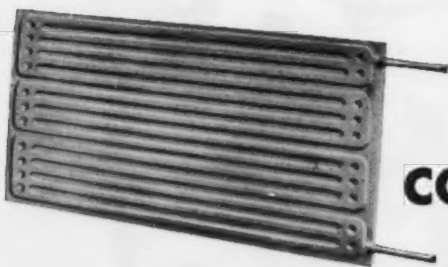
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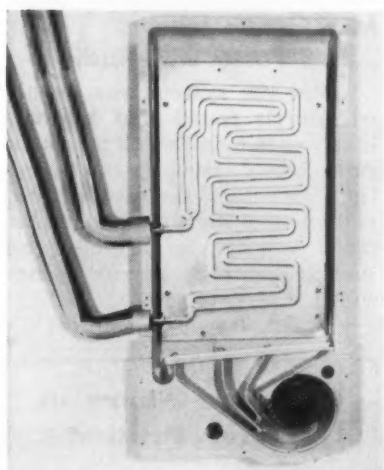


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Forced-Air Circulation Cools Refrigerator Food Faster



REFRIGERATED plate attached to a molded plastic panel is heart of new "Cold Injector" system used in top Westinghouse 1958 refrigerator models. When the panel is attached to the inside back of the refrigerator, it forms an air duct with the refrigerated plate in the center. As the blower draws the air out of the cabinet, it is forced past the refrigerated plate, and thus is cooled before being "injected" into the cabinet.

COLUMBUS, Ohio—In the top models in the 1958 Westinghouse line, an entirely new forced-air circulating system is used to cool the conventional food storage compartment.

Blower Fan Changes Air Twice-a-Minute

Purpose of the forced-air system is to cool the food storage compartment faster and to maintain cabinet interior temperatures at a more uniform level. A blower-type fan of 20 c.f.m. capacity changes the air in a 10-cu. ft. cabinet twice-a-minute. Where air circulation is dependent on convection currents, the change is in the order of once-in-5-to-10 minutes.

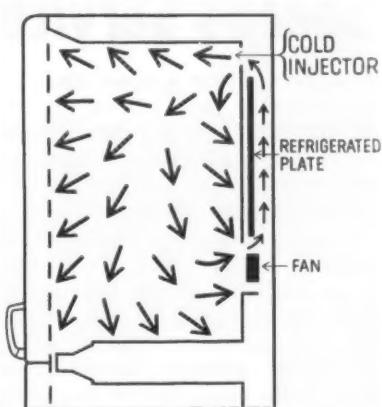
As explained by Robert Dobbie, product design engineer for the Westinghouse Appliance Div., the cooling cycle in the cabinet works like this:

When the compressor and the blower are both running, the air stream carries the heat extracted from the food out of the food storage compartment over the cold plate that is located between the rear inner and outer walls.

Compressor Cuts Off When Cold Air Hits 0°

As soon as the temperature of the cold plates reaches 0° F., the compressor is turned off, but the fan is left running. The warm air stream coming from the food storage compartment soon raises the temperature of the cold plates to 36° F. At this point, the compressor is again turned on and the cooling cycle repeated.

During the compressor turn-off portion of the cycle, the refrigerator is defrosted automatically. When the temperature of the cold plates reaches 32° F. any ice formed on it melts and runs off as water. This defrost water is collected in a pan at the bottom of the refrigerator. It is evaporated during the



DRAWING SHOWS air flow in conventional refrigerator compartment of Westinghouse refrigerator-freezer combination model, and reveals location of "cold injector" system components.

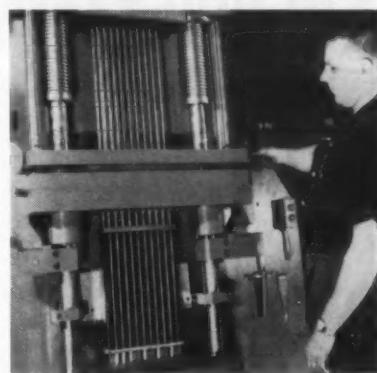
cooling cycle by an extension of the condenser.

Hairpin Bender Produces 3,000 Tubes an Hr.; Expander Opens Ends for Return Bends

STURGIS, Mich.—Up to 3,000 hairpin tubes per hour can be produced on its new "M-4 Hairpin Bender," according to the Burr Oak Tool & Gauge Co. here.

The fully automatic bending machine may be manually loaded, if desired, but the bender's operations remain automatic through the bend, strip, and bend return.

The company has also developed a "Mechanical Tube Expander," a hydraulic machine used for the production of air conditioning coils. The unit accepts a loosely assembled coil, expands the hairpin tubes, opens the ends for return bends to be brazed in place, and accurately sizes the tube sheet positions—all in one stroke, according to the company. The larger



MECHANICAL expander made by Burr Oak Tool & Gauge Co. accepts loosely assembled coil, expands hairpin tubes, opens ends for return bends to be brazed in place.



HAIRPIN bender produces up to 3,000 hairpin tubes per hour.

machines have a tilting table which positions the coil from horizontal to vertical.

Burr also produces a Brazing

Ring Machine which automatically sizes open ends of return bends and simultaneously applies brazing rings.

THINGS WILL REALLY BE OUT-OF-THIS-WORLD AT THE 10th EXPOSITION . . .

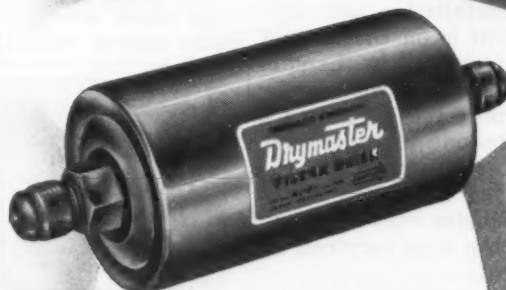
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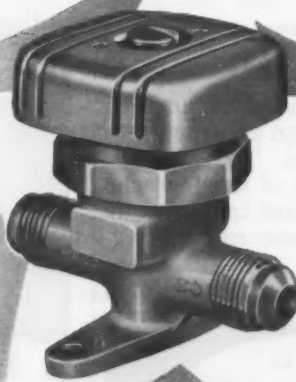
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New Thermostat Firm Formed In Norwalk, Ohio

NORWALK, Ohio — Norwalk Thermostat Co. here has been formed to manufacture a line of electric thermostats.

Dale Callihan, president of the new company, stated that the firm's line of thermostats, of the types extensively used in the appliance and related industries, will be in full production by Nov. 15.

Other officers of the new company are Edward Arlin, vice president; Rex V. Larson, secretary; and Dr. Donald Dewald, treasurer.

Callihan and Arlin were previously associated with Pace, Inc., Mansfield, Ohio, and before that with the Stevens Mfg. Co. Dr. Dewald is also an active director in other companies in the Mansfield area. Larson is an attorney associated in the firm of Gongwer, Larson & Murray.

2-Way Radio System Saves Contractor Over \$10,000 Yearly, Makes Sales, Speeds Service



TWO-WAY RADIO SYSTEM saves money, makes friends, and speeds service for Five Towns Refrigeration Co., Inc. in East Rockaway, L. I., N. Y. Leonard A. Morris, president, listens as Joseph Pepe, dispatcher, broadcasts an emergency call to a serviceman.

EAST ROCKAWAY, L. I., N. Y.—Impossible as it may sound, one refrigeration contractor today is paying for a two-way radio system just from the savings realized in telephone calls to and from his refrigeration servicemen.

Leonard A. Morris, president of Five Towns Refrigeration Co., Inc. here, has proof of this accomplishment in the cost accounting records maintained by his office force.

Firm Has Operational Range of 70 Miles

Five Towns Refrigeration Co. installs and services commercial refrigeration units in populous Nassau and Suffolk counties, Long Island. With an operational range of about 70 miles, the company counts among its customers almost all the large chain supermarket organizations—A & P, Big Ben, Sunrise, etc.—in that area.

Morris built his organization not on installation alone, but on 24-hour-a-day, seven-day-a-week

service. Service of this sort is a "must," because when refrigeration failure occurs in a supermarket, thousands of dollars worth of merchandise is at stake.

Realizing that every minute counts in such an operation, Five Towns Refrigeration Co. recently installed a Bendix "Dyna-Com" two-way radio system. The system consists of a 60-watt base station, which the dispatcher uses to control the operation of all servicemen in the field; 12 60-watt mobile radios that are mounted in eight panel trucks and four cars; and three remote control units.

'Remotes' Installed In 3 Offices

One of the "remotes" is located in Morris' office. The second is in the office of Harry Eichhorn, a partner who is in charge of installation and service. The third is on the desk of Morris' secretary, who handles all complaints.

On the roof of the building a 120-ft. antenna provides the necessary height so that the messages may reach the radio-equipped vehicles wherever they may be in the area serviced by the company.

The entire system is equipped with "Quiet Line," a tone-coded squelch system that eliminates outside interference and permits only Five Towns Refrigeration messages to be heard.

Although Morris is not the first refrigeration contractor to take advantage of two-way radio, he is one of the few who can tell you almost to the penny how much two-way radio is saving him.

This is possible because of a

cost accounting system that is so complete that Morris knows at any time exactly how much he makes on every job, and, if the profit is too small, where the excessive cost occurred.

When the Bendix Radio sales engineer, Ed Karl, first approached Five Towns Refrigeration about two-way radio, one thought intrigued Morris: How much, if anything, would two-way radio save him in the telephone calls that his servicemen had to make to keep in touch with the office?

He put his accounting department to work in making a survey of the cost of calling the office by telephone. It was found that the minimum amount of calls to the office made by men in the field was five per day per man at a minimum of 10 cents per call.

Servicemen Would Not Have To Hunt for Public Telephones

It was also found that an average of one-half hour a day was spent by each man in locating a phone, getting calls through, waiting for the use of public phones, etc.

The total telephone tab was estimated at \$2.50 in time and overhead, plus 50 cents for the calls, or \$3.00 per day per vehicle.

With 12 vehicles on the road, telephone calls were costing Five Towns Refrigeration a minimum of \$780 per month, or \$9,360 per year. With the Bendix two-way radio system, there would be a net savings of \$6,000 a year—just on incoming calls.

Although no survey was made of outgoing calls, the accounting department estimated that here two-way radio would provide a net savings of \$4,000 a year.

In other words, the two-way radio system would pay for it-

self in about a year just from the net savings from incoming and outgoing telephone calls. Morris bought the system.

Men Get on Jobs 50% Faster with Radio

After the system was installed, Morris found that his savings weren't limited to telephone calls alone. Because refrigeration mechanics are highly skilled and highly paid craftsmen, every minute lopped off their operations means money saved.

(Concluded on next page)

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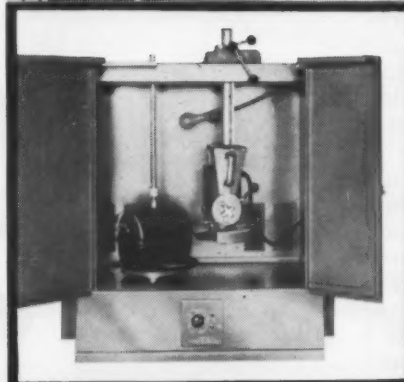
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SLANTS ON SERVICE

California Revises LP Tank Valve Order

"Slants on Service" is a "package" devised by the NEWS to meet the needs of busy servicemen and contractors.

How to Replace Unit

If Hermetic Burns Out

The following procedure for replacing motor-compressors following a burn-out is recommended by Copeland Refrigeration Corp.'s Service Dept.

1. If it is a water-cooled system, drain out the condenser water to assure no damage to the condenser due to freezing, and blow out the refrigerant charge.
2. Disconnect the expansion valve or capillary and flush out the entire system with Refrigerant-12 or 22.
3. Reconnect the expansion valve or capillary, install an oversized dryer, and draw a

deep vacuum with a vacuum pump. Copeland advises against using the motor-compressor as a vacuum pump, and cautions against operating the motor-compressor while drawing a vacuum.

4. Break vacuum with Refrigerant-12 or 22.
5. Draw a vacuum again and repeat Step. No. 4.
6. Repeat Steps 4 and 5.
7. Place unit in operation.
8. After about 30 days check oil for discoloration. If dark in color, change oil and install new dryer. Check oil again for discoloration at end of another 30 days, and repeat oil change and dryer installation until oil remains clear and clean.

SAN FRANCISCO—New and replacement safety valves on liquid petroleum gas tanks are to be set at not more than 110% of tank working pressure, the state division of industrial safety has announced.

This decision will be in effect until new orders are adopted by the Industrial Safety Board.

Enforcement has been rescinded of a safety order adopted earlier this year which permitted safety valves to be set at not more than 125% of tank working pressure.

Objection to the order was registered by the LP industry on the grounds that tanks in areas where ambient temperatures are high have released gas because vapor pressures rose, valves opened, and a hazard was created in the area around the tank.



SERVICEMAN CALLS OFFICE before and after each service job, reporting his location and any other pertinent information. The rapid service that this communication system makes possible wins sales for the firm especially among supermarket customers who can lose thousands of dollars from delay in getting refrigeration equipment back in operation.

2-Way Radio--

(Concluded from preceding page)

Since using Bendix two-way radio, Five Towns Refrigeration can dispatch men and get them on service jobs 50% faster. This is not a fanciful figure picked out of the air: It is based on accounting records kept by Five Towns Refrigeration.

Men Take Calls Near Home Without Reporting To Office Each Morning

In one instance, a serviceman was ready to start on a job just seven minutes after the customer's call reached the office.

The servicemen, some of whom live as much as 30 miles from the office, take their trucks home with them. In the morning, before leaving home, they radio the office and are dispatched to the jobs nearest them instead of driving in to the office and then backtracking to the job. This means a big reduction in the operating cost of vehicles.

"In fact," says Morris, "since installing the two-way radio system, we estimate that we have gained an extra man and vehicle by virtue of time saved on service calls and lower vehicle expense."

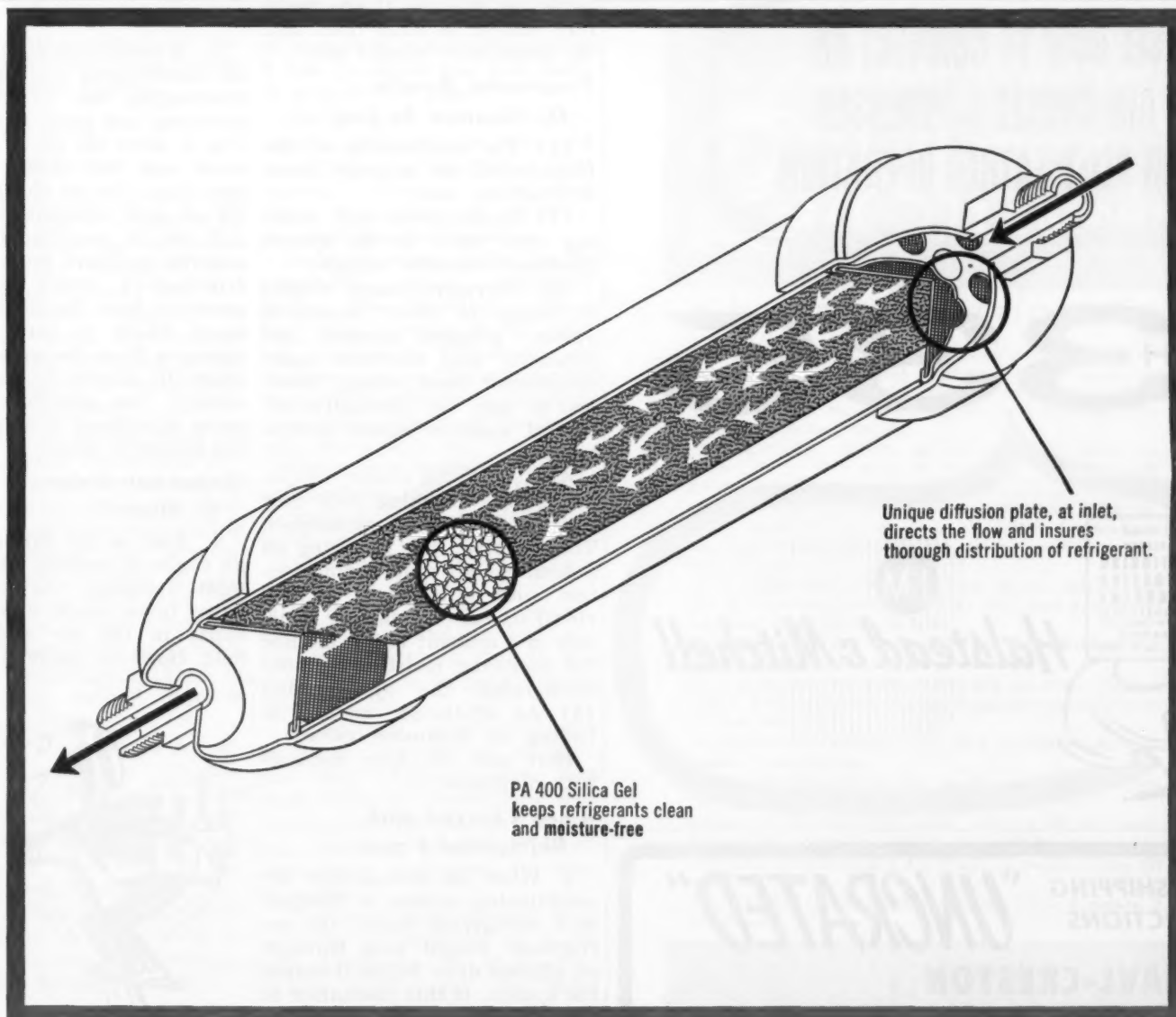
Customers Like Quick Response to Calls

Two-way radio also helps to make sales. "When we sell an installation," continued Morris, "we stress the service we give with our radio-dispatched service trucks. Our competitors don't have this service; so we've got a distinct advantage. Customer reaction has been very favorable. They all like our quick response on service calls."

Morris started Five Towns Refrigeration Co., Inc. 12 years ago, after five years in the Air Force, where he served as a maintenance officer and flight engineer on the B-29's in the Pacific Theater of war.

From an organization that first used a kitchen table for a desk, Five Towns Refrigeration has grown until today it has a refrigeration department that consists of 40 men. Of the 15 vehicles used for service and installation calls, 12 are now radio-equipped.

The radio system is in use from 8 in the morning until 8 at night, seven days a week.



There's a Purolator dehydrator for every refrigeration and air conditioning application

Purolator can design and build refrigerant drying units for equipment manufacturers, to meet any specific need. The diagram shown is simply an indication of Purolator's capacity; here are a few of its advantages:

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- Low pressure drop
- Removes acids and circulating solids

The Dryer/Filter can be designed and built in all capacities, connection sizes, types, shell metals, in either refillable or sealed models . . . or exactly to your specifications.

This versatility is one of the many advantages of dealing with Purolator. It puts at your disposal Purolator's superb engineering and manufacturing setup. It assures that Purolator can answer your specific refrigerant drying problem with the dryer/filter that exactly fits your needs.

PUROLATOR

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WAYNE, MICHIGAN

Method of Keeping Chrysler Auto Cooling Systems Dry Described

'Moisture Content In Usual System Should Be Under 10 Parts a Million'

By Ed Beacham, Senior Engineer, Ansul Chemical Co.

Automobile air conditioning Chemical Co. products, the T-Flo refrigeration drier, the Dry-Eye moisture indicator, and the Super Dry Eye, a combination field installed automotive air conditioning may exceed a half million units this year.

'Need Simple, Foolproof System'

With such widespread use, auto engineers have to make the systems as simple and foolproof as possible. At Chrysler Corp., engineers have written several new procedures for air conditioner maintenance into their training manuals. These involve the use of three Ansul

system was pin-pointed by Chrysler engineers as the cause of many "bugs" in air conditioning equipment. They went to Ansul to find out how much moisture an air conditioning system could contain without trouble.

The engineers were told that the moisture content of a Refrigerant-12 air conditioning system, the one used in most

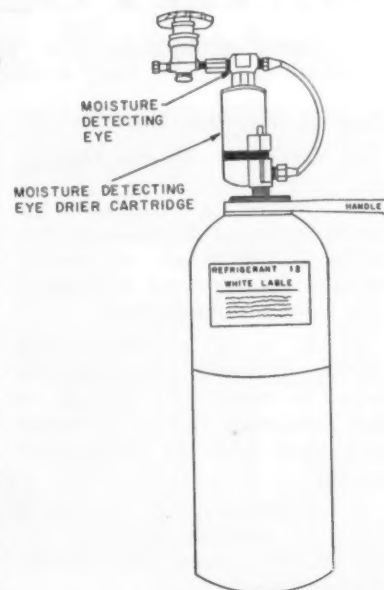


FIG. 1—Refrigerant tank with moisture detecting eye and drier cartridge.

autos, should not exceed 10 parts per million. If the moisture content is more than this, the progressive results are:

Progressive Results

Of Moisture In Unit

(1) The combination of Refrigerant-12 and moisture forms hydrochloric acid;

(2) Hydrochloric acid reacting with metal in the system produced corrosive sludge;

(3) Corrosive sludge results in sticky or stuck expansion valves, plugged screens and strainers, and corroded leaky compressor reed valves. Needless to say, the cumulative effect of moisture means serious trouble.

At its training center, Chrysler is now teaching four new moisture control techniques. They involve: (1) Charging an automotive air conditioning system with refrigerant; (2) A visual means of detecting moisture in a system; (3) A method for removing moisture without discharging the system and (4) An off-the-car method of testing an expansion valve.

Here are the four methods with diagrams:

When Charged with Refrigerant Vapor

1. When an automotive air conditioning system is charged with refrigerant vapor, the refrigerant should pass through an efficient drier before it enters the system. If this precaution is not taken as much moisture may re-enter the system as was removed during evacuation and sweeping.

Fig. 1 shows a simple and efficient method of attaching a moisture indicating drier cartridge to a tank of refrigerant. The indicator on the drier shows whether the refrigerant is dry by a deep blue color. The indicator may be left attached to the tank, ready for instant use. When the tank is empty, the drier can be transferred easily to a full tank.

Whether Refrigerant-12 System Is Wet, Dry

2. A foolproof way to determine whether a Refrigerant-12 air conditioning system is wet or dry is shown in Fig. 2. If the indicator shows deep blue after about 15 to 20 minutes of engine operation with liquid flowing through the indicator, the system is in safe operating condition.

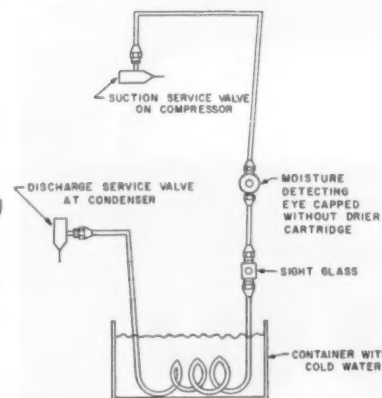


FIG. 2—Moisture detecting eye installation.

If the color changes to a light blue and remains that way, it indicates the system is borderline and the moisture content should be lowered. If the color changes to and remains pink, excessive moisture is present.

Way To Dry Out Wet System

3. A method to dry out a wet air conditioning system without discharging the refrigerant or replacing any parts is shown in Fig. 3. After the set-up has been made and the indicator turns deep blue, the car should be left for at least several hours or a full day if possible. The drier adsorbs moisture from the Refrigerant-12 which picks up moisture from the liquid refrigerant which in turn reclaims moisture from the system's wet drier. If allowed to stand long enough, this procedure will remove significant moisture from the system's drier.

'Expansion Valve Is Abused'

4. Just as the carburetor on an engine is wrongly blamed for most troubles, the expansion valve takes much unwarranted abuse in the air conditioning field. However, there is a meth-

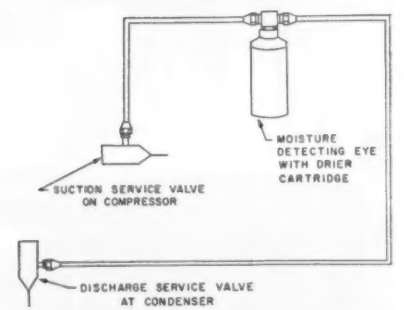


FIG. 3—Service valves and moisture detecting eye with drier cartridge.

od of field testing an expansion valve to see if it is faulty. It goes like this:

(a) Direct a source of dry air 90 to 250 p.s.i. through an indicating drier cartridge attached to insure against any moisture vapor or particles of dirt entering the valve.

(b) With the left hand valve on gauge manifold closed and the right hand valve open, the right hand gauge will indicate the pressure of the air supply. Slowly open the left hand valve (counterclockwise) until the left gauge indicates 70 p.s.i.

(c) Immerse the expansion valve's sensing bulb into the water and ice 32° F. water bath.

(d) With the expansion inlet pressure gauge (left hand gauge) reading 70 p.s.i., the sensing bulb completely submerged in the 32° F. water bath and the compressor test cap bleeding off pressure, the outlet pressure gauge should read between 23 and 26 p.s.i.

(e) Remove the sensing bulb from the water bath and warm the bulb in the hand. With the expansion valve and inlet pressure still reading 70 p.s.i. (adjust if necessary), the outlet pressure should rise to a pressure of not less than 53 p.s.i.

When the expansion valve successfully passes this valve test, the valve has the proper (Concluded on next page)

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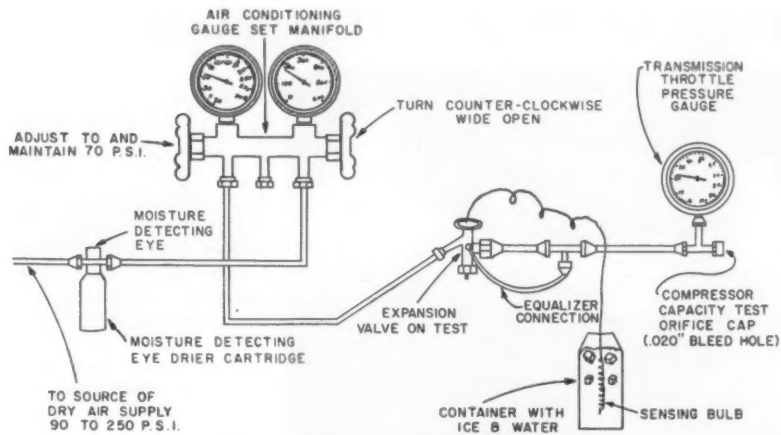


FIG. 4—Expansion valve test (off car).

Moisture In Auto System—

(Concluded from preceding page) super heat setting, a proper pressure limit value, the rated capacity and has not lost its thermal charge. Therefore, it will give satisfactory performance.

One of the problems still plaguing the automotive air conditioning field involves units which operate perfectly during the spring and fall, but develop freeze-ups at the expansion valves on hot summer days during prolonged driving. Chrysler engineers, delving into the problem, found that some of these units had been tested with moisture indicators as their service manual outlines and were found to be wet. Others were presumed to be wet.

In all cases, the systems were purged of refrigerant, evacuated three times, breaking the vacuum each time with dry refrigerant gas passed through an Ansul Dry-Eye with T-Flo Drier attached and then fully charged with dry refrigerant.

'Freeze-Up on Hot Day'

When tested, the systems worked very well, but after an hour's use on a hot day, a freeze-up would occur again at the expansion valve. In a case like this, the refrigeration drier in the car's system works exactly the opposite of the atmosphere in relation to moisture. The atmosphere can accept and retain much more moisture at higher temperatures and condenses or releases the moisture at lower temperatures.

The drier can adsorb and retain much more moisture at

lower temperatures and releases the moisture at high temperatures. Therefore, it is possible that a drier containing considerable moisture allows a system to operate efficiently on a normally warm day, but releases enough moisture to cause a freeze-up on a hot day. The moisture in the system and the drier cannot be removed merely by purging the system.

'Wet Drier Real Cause of Failure'

This background on drier operation pointed to a wet drier in the system as the real cause of failure. Two corrective procedures are written into the Chrysler service manual. It states that when a freeze-up occurs at the expansion valve, the system should be tested with a moisture indicator.

If the system is wet, there are two methods of correction; (1) Purging the system of refrigerant, replacing the system's receiver-strainer-drier, evacuating and recharging the system. This method requires a new receiver-strainer-drier; (2) The other method involves drying out the system using an indicating drier cartridge outlined in Fig. 3. This method requires much more time.

However, a procedure recently written into the Chrysler Training Manual details a third method which does away with the receiver-strainer-drier and takes a very short time. It employs the new Ansul Super Dry-Eye, a combination sight glass and moisture indicator with indicating elements for Refrigerant-12 and Refrigerant-22.

How To Correct Failure

The procedure: Purge the refrigerant from the system, remove the sight glass, install the combination sight glass and indicator with 20-cu. in. T-Flo Drier (arrow on Dry-Eye pointing toward rear of car) evacuate and recharge the system. As the system warms up and the wet receiver-strainer-drier releases moisture, the moisture will be absorbed by the drier.



EASE with which Armstrong "Armaflex," a flexible foamed plastic insulation—can be slipped over irregular pipes is demonstrated here.

Foamed Plastic Insulation Helps Solve Ice Problem

LANCASTER, Pa. — Several refrigerator manufacturers have solved the problem of ice formation on refrigerant lines in their new models by use of a foamed plastic pipe insulation developed here by the Armstrong Cork Co., the company reports. The new material, called Armaflex, is extruded so that it has no seams and can easily be slipped over pipes.

The problem was how to eliminate concentrations of ice and liquid water on refrigerant lines passing through insulation spaces in freezers and combination refrigerator-freezers.

Moisture vapor from the refrigerated space—especially during the defrosting cycle—and from outside of the cabinet, tended to accumulate as condensation on the refrigerant lines. With refrigerant temperatures below freezing, the moisture froze into ice.

The defrost systems were not sufficient to eliminate the ice. Consequently, it continued to build up.

In order to prevent vapor penetration into the fibrous mats in the insulation spaces, and moisture and ice build-up, the manufacturers had to enclose the mats in polyethylene film.

In addition, an attempt was made to insulate the refrigerant lines where moisture was most likely to concentrate, but results were not at first successful. Learning of the problem, Armstrong suggested its new Armaflex.

The lines were covered with sections of Armaflex of 1/2-in. wall thickness. In these particular applications, the sides were slit, snapped over the refrigerant lines at their most vulnerable spots and then sealed with tape. Since Armaflex is both a highly efficient insulation and moisture proof, it eliminated moisture, it was said.

Use of Armaflex not only eliminated the moisture problem but also made it possible to eliminate the polyethylene covering of the fibrous insulation, thus improving its efficiency also.

Sees Built-In Conditioner Shells 'Important' for Long Unit Life

LONG ISLAND CITY, N. Y.— "We would like to be sure that our built-in wall air conditioners will last as long as the building in which they are installed," states the Lewyt Air Conditioning Corp.

"In this regard," says the firm, "the shells are as important as any part of the air conditioner. They are unlike the casing for a regular window unit which may be removed and repaired. Once a shell is installed in a building, it is there for the life of the building and must be manufactured to withstand all kinds of weather conditions."

To assure this long life, Lewyt has been vigorously corrosion-testing parts of its units for over three years.

Extremely corrosive salt water is supplied to samples of

steel used to make outer shells, the company points out. Small squares of zinc-coated steel are coated with pre-tested paint and submerged in the salt water for periods up to six months. The water is kept at controlled temperatures.

From such tests, engineers are able to predict the effect of corrosion for 20 years or longer, Lewyt reports. Salt water tests of this type simulate the worst weather conditions to which unit may ever be subjected, they say, and the tests prove the durability of the paint as well as the zinc-coated steel.

Lewyt points out that the steel used for the base in shells receives a half-inch layer of asphalt to provide further protection against corrosion of the

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AIR HANDLING UNITS: #4 d-h HH Series: ceiling suspended. #5 d-h HHV Series: floor mounted. Both: 14 models, 624 thru 28000 cfm.

VENTILATING UNITS: #6 d-h AM: 1752 thru 32250 cfm. MULTIZONE TYPES: #7 d-h FLEXAZONE: for simultaneous, independent, variable heating, cooling, ventilating; 1752 thru 32250 cfm.

PACKAGED AIR CONDITIONERS: #8 d-h AECR: with built-in evaporative condenser. #9 d-h SCR: with water-cooled condenser. Both, 7 1/2 thru 75 H.P.

PACKAGED STORE COOLERS: #10 d-h DYNA-PAC & ROYAL-AIRE: 2 thru 15 tons.

PACKAGED WATER CHILLERS: #11 d-h CWG: 7 1/2 thru 75 H.P. #12 d-h CWG-E: attached evaporative condenser. Both 7 1/2 thru 75 H.P.

EVAPORATIVE CONDENSERS: #13 d-h PERMA-FAN: 13 models; 5 thru 110 tons.

COILS: #14 Extended surface; steam, water, DX #15 Type "H": small applications, DX or chilled water.

PACKAGED WATER CHILLERS: #16 d-h AC: air cooled. #17 d-h WC: water cooled. Both, 2, 3, 5 H.P.

COOLING TOWERS: #18 d-h WMT: 13 models, 5 thru 100 tons.

AIR-COOLED CONDENSERS: #19 d-h ACC: 5 models, 2 thru 20 tons.

d-h COMMERCIAL REFRIGERATION:

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PRODUCT COOLERS: #27 d-h FLOCOLD (PT & CT; FTWD & CTWD; FTAF & CTAF): 9 models; 1314 to 37325 cfm.

REPLACEMENT HOUSING: #28 d-h SPASAVR: kit to replace existing unit; 14 models.

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Plan Will 'Automate' Plant's Flow Pattern of Tools, Materials

Master Control To Dovetail All of Firm's Non-Productive Automation

DAYTON — Semantically speaking, the term "automation" as employed today by industry usually connotes the application of a more mechanized, more efficient production or product handling procedure.

However, many what-could-be termed "automation principles" are also being utilized in other areas of industry operation. New machines and new control systems are being utilized in a coordinated manner to modernize and streamline the handling of paperwork; to achieve more minute inventory precise production scheduling.

New Ideas Utilized

At Chrysler Airtemp a new concept of non-productive automation was envisioned three

years ago. Since then a number of ideas allied to the concept have been put into successful operation. Others are currently being worked out. And, per the timetable of Airtemp planners, by 1959 it is expected that the new automation concept will have been applied to the handling of all materials classified as non-productive.

What is the new concept? What are its benefits and how does it operate?

Essentially it involves an exhaustive appraisal of the flow pattern of all tools and materials: how they are purchased, delivered to the plant and allocated to workers; how they are used; how they are returned by workers for servicing and re-use; how they are inventoried; how they are eventually scrapped.

Forms used for the procurement and return of tools and materials are also given thorough study as are handling and servicing costs.

Study Work

Assignments

Studied on the same basis are the work assignments of the various individuals who are responsible for the procurement, disbursement, servicing, and scrapping of non-productive items.

As the study of all these aspects progresses, a new automation method of knitting them together more efficiently is evolved. In some instances the new method entails the use of a new machine (or machines) to code tools and materials in an improved manner which will identify them more thoroughly and thus speed their handling.

In some instances new forms are developed to facilitate the distribution of materials or to provide more detailed information when they are returned for replacement. In other instances—or as part of the over-all pattern—perhaps it's found that a new inventory arrangement is warranted.

Again, particularly with bulk materials, it may and has been found that vendor delivery to the plant can be scheduled more advantageously.

A master control for all these procedures and forms is compiled. When all studies are completed—the targeted completion date is 1959—the master control will in essence dovetail all phases of Airtemp's automation program for non-productive materials.

Benefits Outlined

Benefits of the program—portions of which are already functioning—are manifold. In part they include:

1. New machines and forms facilitate more exact day-by-day inventory control.



AN INSPECTOR in Airtemp plant uses his charge-a-plate to obtain a micrometer. Using the plate requires no writing at the crib, speeds transactions, eliminates recording error possibility as attendant stamps employee's name and social security number from plate on a record card.

2. Disbursement of tools and materials to workers and workstations is accomplished with greater dispatch.

3. Replacement of tools is expedited.

4. New forms developed for use when tools are returned for replacement list more detailed information which when tabulated enables Airtemp's tool engineer to appraise usage for proper application. Thus he can gauge immediate and future tool requirements more precisely.

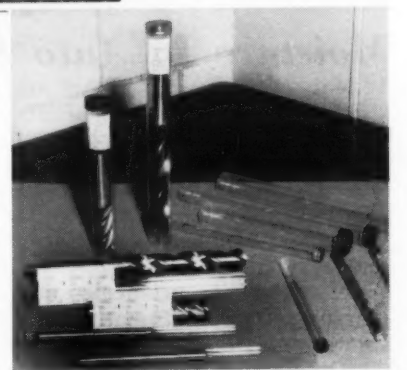
5. Information listed on new forms permits replacement or tool servicing charges to be assessed to individual departments.

6. Clerical assignments are clarified and detailed in ledger form. This eliminates duplication of assignments and speeds the handling of paperwork. It reduces the amount of supervisory direction required and gives supervisors finger-tip work-load information.

These benefits, and there are quite a few others, are not separate entities. Like parts of a jig-saw puzzle they all fit together. They form a significant part of Airtemp's "automation of non-productive materials" program.

One automation approach now employed by Airtemp is as follows:

A new coding system has been developed for all tools. Cutting tools, for example, carry an eleven digit number. Each digit has a significant meaning even



THIS VIEW shows how tools are coded and packaged at Airtemp. Stickers identify tools from time of purchase until scrapping. It indicates original size of tool, salvage sizes, and how tool should be classified when scrapped.

to the extent of classification of the tool, type, and with what material it is used.

Code system serves to identify a tool from its original purchase size (as it is reserviced) on down to where it no longer can be used. At that time, the code's last two digits enable inspectors to scrap the tool into proper type for scrap value.

Individual Record Set

From the code system, an individual Control History Ledger Record is established. This record contains all data such as: code, complete description of tool, standard ordering quantities, prices, minimum and maximum values to control inventories. It also records activities of borrow, on job use, on hand at the tool crib, and activities of tool grind.

(Concluded on next page)



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V-27



PICTURED with two of the "procedures" books he developed is Marvin A. Cook. He holds "Master Procedures" book which knits together all phases of Airtemp's non-productive material control program.

New System--

(Concluded from preceding page)

This information and tool activity is posted through a Class 3100 National Cash Register Accounting Machine. Postings are made daily. While posting, the machine automatically creates three tapes.

One tape is used to initiate a purchase order when stock falls below established minimum. A second serves as a follow-up guide on particularly urgent items. A third tape routes tools from Tool Crib to Tool Grind. This is done when a Tool Crib minimum balance is approached.

Adopts Charg-a-Plate

Part of the over-all automation study, a new Charg-a-Plate System has been adopted by Airtemp. The handy Charg-a-Plate has eliminated written transfer forms and has minimized the time required for withdrawing tools and supplies at the Tool Crib.

Also used for employee identification, the Charg-a-Plate has speeded plant entrance transactions and has fostered new methods of handling payroll and personnel department records.

Converting tools from one size to another was mentioned. Through the Code System and Salvage Program, Airtemp utilizes all cutting tools when they pass from one size to another. This practice, which affords a considerable saving, is made possible by the accurate coding system and by the use of information taken directly from the Control History Ledger.

It is well to stress at this time the importance of this program, in that inventories can be intelligently maintained at a completely adequate minimum. Likewise, the detailed, daily control pares down the possibility of a production hold-up occurring as the result of a tool shortage.

Storage of tooling, too, is of utmost importance. The code system allows tools to be stocked more systematically in a smaller area. At Airtemp for all practical purposes a two drawer system is used. One for



SIXTY of these work-station tool boxes are now in use at Airtemp. Each contains the full complement of tools required at that particular station making only one record of "tools furnished" necessary at each station.

sharp tools, one for dull. This eliminates the need for extra storage space.

Another part of the newly installed program, all tools for productive and non-productive use are supplied as a unit, rather than individually. Tools required at each work station are furnished in a company owned tool box. Employees are

thus always fully equipped for their work assignment. Fewer trips to and from the tool crib are necessary and record keeping of who-has-what-tool is simplified considerably.

How Bulk Items Are Handled

What about bulk items? As usage dictates they are sched-

uled into the Plant direct from vendors stock. From Receiving they are moved immediately to the work stations where they are used. Made possible also by daily "usage" posting and more precise scheduling, this method does away with plant storing and extra handling.

The work pattern of the entire system and of each of its phases is programmed in Master Procedure Books compiled by Airtemp's non-productive material office. Each staff member is responsible for certain sections of the program. Responsibilities are printed in detail so that an employee, whether old or new with the firm, has a thorough knowledge of his particular assignment.

In summation it could be said that Airtemp's new automation concept involves both systems and people. However, the achievement of a robot-type op-

eration is by no means the company's aim. Rather, it is recognized that new discoveries—equipment-wise and system-wise—obsolete practices of industry as well as machinery. When antiquated, perhaps cumbersome procedures can at the same time be simplified and improved, both employees and the company benefit.

Fedders Signs Loewy as Consultant Designer

MASPETH, N. Y.—Raymond Loewy Associates has been signed as consultant designers by Fedders-Quigan Corp.

According to Salvatore Giordano, Fedders president and board chairman, the design specialists will be handling the firm's full line of air conditioning and heating equipment. The first project is Fedders 1959 room air conditioner models.



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Thermostatic Expansion Valve Fits 'Smallest of Spaces'

Power Element at Side of 2-3/16-In. High Innovation

DETROIT—An entirely new design concept has been used in the new Detroit Controls No. 718 "Compact Capacity" thermostatic expansion valve, state company officials.

Down through the years engineers have designed more compact, efficient refrigeration systems resulting in less and less space to mount controls and expansion valves. This new Detroit valve is designed to fit into the smallest of spaces.

The conventional method of expansion valve construction has always placed the power element at the top of the valve, it is pointed out. In this old method the inlet is at the bottom and the outlet and the side of the valve.

When installed as shown in Fig. 1, the valve has a minimum height of 2 3/16 in. This minimum height is accomplished by placing the power element on the side of the valve. The inlet is still at the bottom and the outlet on the side.

Can Be Mounted In Any Position

The valve can be mounted in any position. Thus, it will also replace the conventional valves without repiping the refrigerant lines.

New manufacturing methods were required in the development of this new valve. As one example, the push rod is welded to the ball needle. Thus, the valve has only three moving parts—diaphragm, ball and rod, and spring. The ball is welded concentric with the center of the rod to assure correct seating alignment. A unique production welding machine was developed to accomplish this procedure.

Likewise, specially developed Heliarc welding equipment is used to permanently assemble the power element. The diaphragm, pressure pad, upper and lower housings are welded together in one operation,

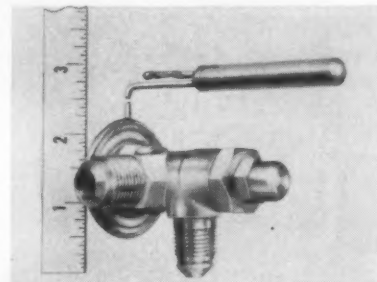


FIG. 1—With the power element of the model 718 thermostatic expansion valve placed on the side, the valve has a minimum height of 2-3/16 in. Inlet is still at the bottom, and outlet on the side.

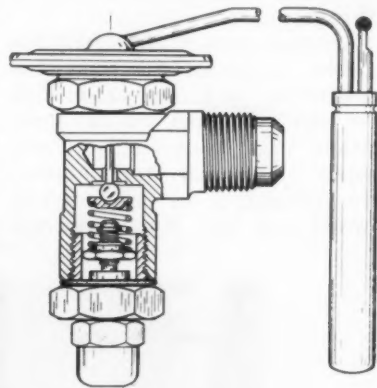


FIG. 2—Exploded view drawing of valve, showing principal parts. Valve has only three moving parts—diaphragm, ball and rod, and spring.

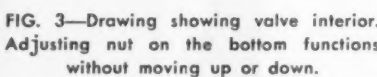


FIG. 3—Drawing showing valve interior. Adjusting nut on the bottom functions without moving up or down.

which results in a joint which will hold an infinitesimal amount of refrigerant charge—virtually forever, say Detroit Controls officials.

Allows Diaphragm Flexibility

This welding method is said to allow full diaphragm flexibility. A large, effective area can be maintained because of the narrow, uniform welding bead at the extreme edge of the power element.

Elements are subjected to a series of tests before charging. They are given a leak test with high pressure air as well as a diaphragm flexibility test. Capil-

lary tubes are then installed and the element charged. A specially developed electronic leak test is conducted on the completed power element.

A high density forging is used for the valve body, and full, unrestricted flow of refrigerant is achieved because of the minimum internal parts, and the location of the inlet passage.

Non-Rising Stem

Use of a non-rising adjustment stem reduces the over-all length of the valve. An "O" ring seal on the stem eliminates the conventional packing and gland.

The new model 718 Thermostatic Valve is rated for .5 to 2 tons capacity for Refrigerant-12, and .8 to 3 tons capacity with Refrigerant-22, internally equalized. With external equalization, ratings are 1 to 3 tons with Refrigerant-12, and .8 to 5 tons with Refrigerant-22. The power elements are available with "L," "C," "Z," or "G" charge.

ALL-ALUMINUM condenser made by Modine Mfg. Co. is claimed to be the first metallurgically bonded heat exchanger of its kind to be successfully mass produced.

Develop Aluminum Condenser for Auto Air Conditioners

RACINE, Wis.—New aluminum bonding processes said to have been perfected in the Modine Mfg. Co. laboratories here has resulted in the development of an all-aluminum condenser for use as part of an auto air conditioning system, states George Haislmaier, sales manager of Modine's Industrial Div.

This condenser is the first metallurgically bonded heat exchanger of its kind to be successfully mass produced, the company claims. The condenser has been used in the auto industry air conditioning system marketed by the John E. Mitchell Co.

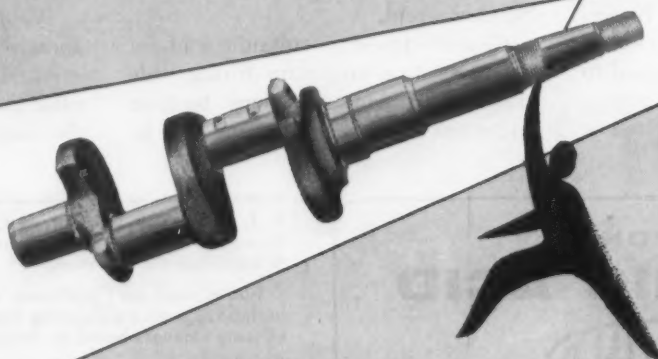
Design of the Modine condenser is said to provide a capacity of more than 1 1/2 tons of air conditioning during idling speeds in surrounding temperatures of 130° F., under a pressure of 390 p.s.i. The condenser is constructed of aluminum tubes bent into a serpentine form to which aluminum fins, also in a serpentine form have been metallurgically bonded through a special process.

The core weighs less than seven pounds and has been kept to less than one inch in depth. Maximum cooling capacity has been retained while restriction to air flow through and across the unit has been kept to a minimum.

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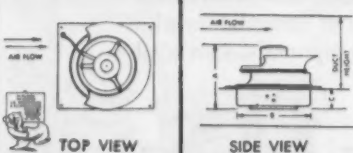
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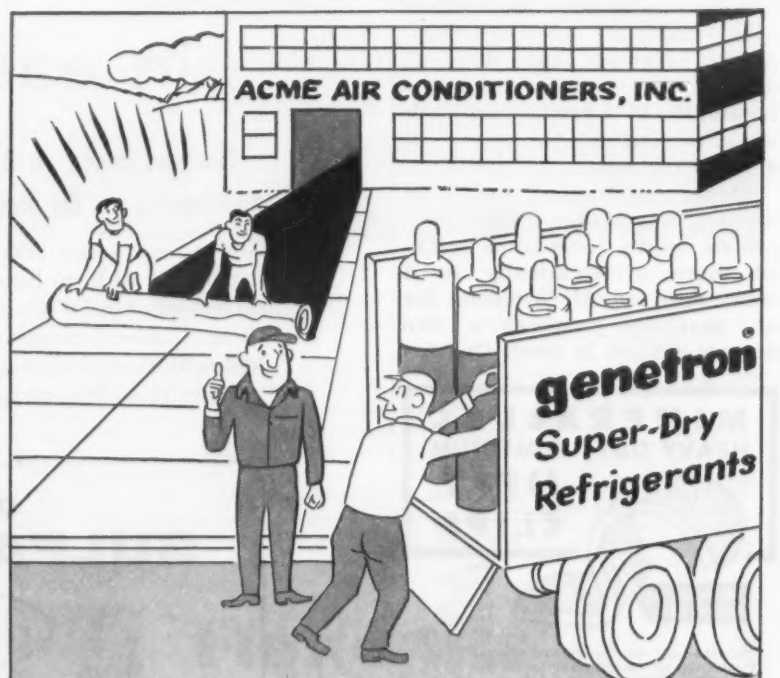
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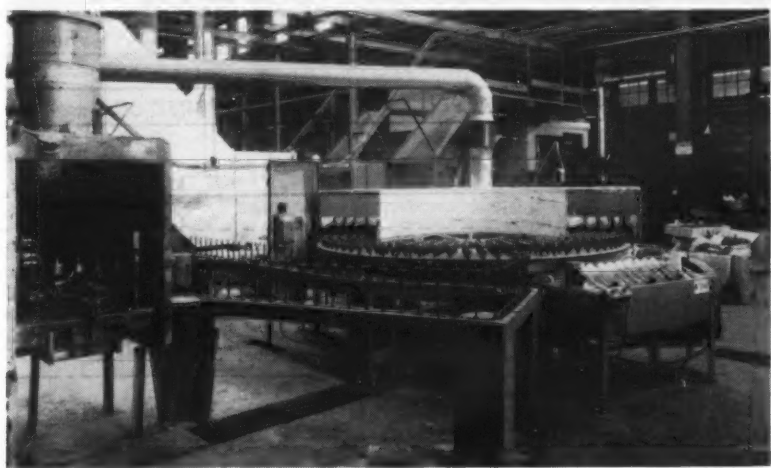
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New Driers Dehydrated, Reactivated In 600° Rotary Furnace, Then Sealed



SPECIALLY designed rotary furnace through which assembled Tube Manifold Corp. driers pass while temperature is maintained at over 600° F. is shown here. Just four filter-drier models are needed to handle units up to 15 tons.

N. TONAWANDA, N. Y.—“Taking full advantage of the unusual properties of the revolutionary desiccant, Molecular Sieves, requires special techniques and equipment in the manufacture of driers,” reports Richard F. Burke, sales manager, Tube Manifold Corp. here.

According to Burke, the use of such techniques and equipment have made it possible for

them to reduce to four the number of TMC filter-drier models necessary to handle units up to 15 tons. The new driers have been designed without compromise with any previous designs involving other desiccants.

Dehydration and reactivation of the assembled driers are critical points in the manufacturing operation, and Tube Manifold Corp. has installed a specially designed rotary furnace through which the assembled driers pass while the temperature is maintained at over 600° F. The TMC Filter-Driers are then hermetically sealed with plastic caps before going on to subsequent operations.

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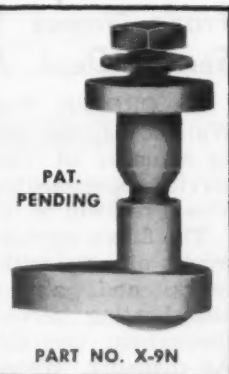
The insulator that incorporates all of the features required to make it truly leakproof.

The insulator that is all Nylon — No rubber or fiber parts, and therefore is unaffected by oil, refrigerants or chemical acids usually found in hermetic units.

The insulator with the unique two-piece construction that provides an impregnable seal between terminal post and housing — as well as reducing assembly time to a minimum.

The insulator with the exceedingly high dielectric factor, and is stable over a temperature range of -40° to 300°.

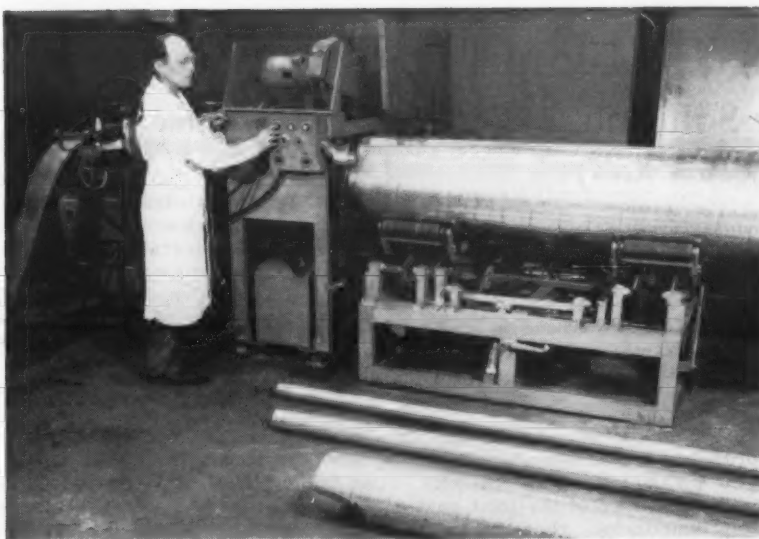
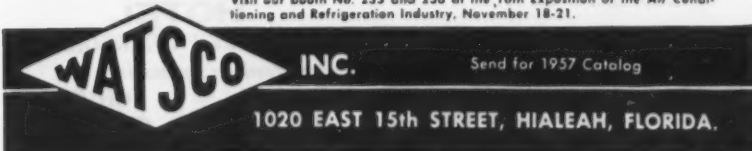
This insulator can be molded to all specifications and sizes. Samples available to original equipment manufacturers for testing and evaluation.



PAT. PENDING

PART NO. X-9N

Visit our booth No. 235 and 236 at the 10th Exposition of the Air Conditioning and Refrigeration Industry, November 18-21.



THIS NEW Machine will cut the cost of making the cylindrical air conditioning ducts used in multi-story buildings up to 20%. Air conduit from three to 24 in. in diameter is spirally wound from thin metal strip.

Carrier Claims

Automatic Duct Fabricating Machine Cuts Cost by 20%

SYRACUSE, N. Y.—Carrier Corp. has developed a machine which will permit automatic fabrication of air conditioning ducts from 3 to 24 in. in diameter. The new device reduces the cost of such ducts by as much as 20%, states Charles V. Fenn, Carrier vice president.

It will be used to manufacture conduit ducts for carrying high pressure air at high velocity in skyscrapers.

One man can operate the machine from a small control panel.

The apparatus makes cylindrical duct from a continuous strip of thin gauge metal. Joining the spirally-wound stock by a series of interlocking seams increases the strength of the tubing as much as five times over conventional round ductwork, Fenn said.

An automatic cut-off saw slices the conduit into desired lengths without interrupting production. It also requires less setup time than existing equipment. Heretofore, two and three machines have been necessary to produce a full range of sizes. The largest machine of this type is twice the size and ten times as heavy as the new Carrier design, claims Fenn.

High velocity air conduits occupy far less space than conven-

tional low pressure ducts and are applied today in all types of multi-story structures.

Carrier's new conduit machine will be put to work in New York's "big building capital." Additional units will be strategically located throughout the nation.

Pipe in standard diameters of 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 20, 22, and 24 in. can be produced. Zinc-coated steel, aluminum, or copper metal strips can be used.

Rigid, All-Angle Motor Has Third Magnetic Flux Area

OWOSSO, Mich. — Redmond Co. is now producing a new lightweight single-bearing AM-4 "Mono-Motor" for air conditioning and refrigeration applications.

Three design improvements are claimed for the unit to give it "quality and long-life." First, the "Uni-Cast" construction means a more rigid motor that can be manufactured to closer tolerances and run quietly for a long time, the company stated.

Second, Redmond's "Tri-Flux" innovation maximizes performance by adding a third area of magnetic flux increasing a starting and running torques, the firm pointed out. This also makes possible a smaller motor.

In addition, "all-angle" operation is an advantage to original equipment manufacturers, Redmond claims, since the motor can function in any position. This feature is achieved by a permanently-sealed lubrication system which "virtually eliminates maintenance and guarantees against oil leakage."

Backed by a two-year warranty, the AM-4 is approved by both UL and CSA. Six basic models are produced and it may be obtained with many optional features for various customer applications, the company pointed out.



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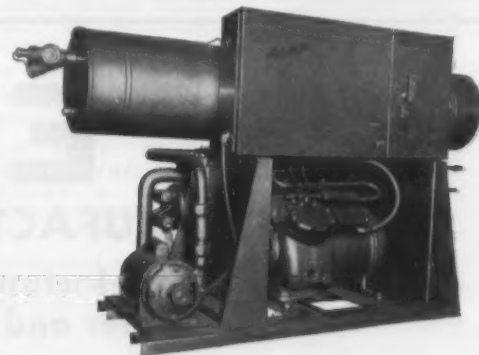
- Prevents valve freeze-ups.
- Stops rust and corrosion — keeps metal parts and oil in top condition.
- Checks acid that damages internal parts.
- Contains no solids, caustics or acids — leaves no powder or other residue.
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Refrigeration Problems

And Their Solution

(As Written by Paul Reed)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Pressure Drop (3)

EFFECT OF PRESSURE-DROP IN EVAPORATOR

In Fig. 2, we are using an evaporator similar to the one used in Fig. 1, but which has a pressure-drop of 3 p.s.i. from inlet to outlet, and we are still using the same expansion valve as in Fig. 1. The bulb is attached to the outlet of the evaporator, and if the outlet

of the evaporator is 25° F., the pressure in the power element is 24.6 p.s.i.g.

The pressure in the inlet part of the evaporator, that is, at the outlet of the TEV, must be 17.7 p.s.i.g. as before, so that the power element pressure tending to open the valve and the evaporator inlet pressure of 17.7 p.s.i.g. plus the 6.9-pound spring tending to close the valve, will be in balance ($17.7 + 6.9 = 24.6$).

If we neglect the pressure-drop through the superheated part of the evaporator, the pressure in the evaporator gradually drops 3 p.s.i. from the inlet to the outlet, so the pressure at the end of the active part of the evaporator must be 14.7 ($17.7 - 3$) p.s.i.g.

At the inlet of the evaporator, the pressure is 17.7 p.s.i.g., so the temperature is 15° F. As the pressure drops through the evaporator, the temperature must also drop in accordance with the saturated pressure temperature table for Refrigerant-12.

At the end of the active part, the temperature is now 10° F., corresponding to the pressure there of 14.7 p.s.i.g. With no pressure-drop, the temperature at the end of the active part was 15° F. which allowed a superheat of 10° F. until the vapor warmed up to 25° F. Now with a 3 p.s.i. pressure-drop, the temperature of the evaporator at the end of the active part is 10° F. so the vapor must superheat 15° F. instead of 10° F. in order to be at 25° F. at the bulb.

This means that more of the evaporator must be devoted to superheating leaving less space for the active part. Since the active part is the part that is really doing the refrigeration job, reducing its size reduces the capacity and efficiency of the system. Because the evaporator has a pressure-drop of 3 p.s.i. instead of no pressure-drop, the superheat of the TEV has been increased from 10 to 15° F., so less of the evaporator is active.

What, if anything, can be done to correct this loss of capacity and efficiency. Suppose that this TEV is adjustable; that is, the valve can be adjusted to a lower super-

heat. We can do this by re-adjusting the valve, which means relieving the pressure exerted by the spring.

READJUSTING SPRING PRESSURE OF TEV

It is difficult to build a valve for much less than a 4-pound spring, for it takes some pressure difference to operate the valve. But let us assume that we can readjust this valve until the spring exerts a pressure of only 4 pounds (or more accurately, a pressure equivalent to 4 p.s.i.).

The bulb is still to be kept at 25° F., so the pressure of the power element is again 24.6 p.s.i.g. Now the spring is only 4 pounds, so the pressure in the inlet will be 20.6 p.s.i. ($24.6 - 4$) to balance the 24.6 p.s.i.g. power element. So the temperature of the evaporator inlet is 19.4° F. corresponding to 20.6 p.s.i.g.

There is still a 3 p.s.i. pressure-drop, so the pressure at the outlet end of the active part of the evaporator is 17.6 p.s.i.g., which corresponds to 14.5° F. Now the vapor must warm up only 10.5° ($25 - 14.5$) instead of the 15° necessary before we readjusted the superheat of the TEV by weakening the spring pressure from 6.9 to 4 p.s.i. Offsetting the effect of increased superheat, and consequent loss of active surface of the evaporator resulting from pressure-drop in the evaporator, can therefore be done by readjusting the TEV to a lower superheat, as we did.

But, as in our example, it may not be possible to readjust the valve for a low enough superheat setting of the valve itself to completely offset the effect of pressure-drop. If, in our example, the pressure-drop had been 5 p.s.i., instead of 3 p.s.i., we could not have come even near to compensating for the pressure-drop.

EXTERNAL EQUALIZER

Maintaining constant superheat despite evaporator pressure-drop can be done in another way though. What we need to do is to have the valve respond to the pressure at the outlet of the evaporator, so that the pressure-drop will automatically be compensated for.

This is done by running a small tube from the underside of the valve diaphragm to the outlet of the evaporator. Thus, the diaphragm "feels" evaporator outlet pressure instead of inlet pressure. This tube is called an "external equalizer."

It must be emphasized that readjusting the TEV for lower superheat or using an external equalizer, merely helps the TEV feed the evaporator so that it is more fully active despite pressure-drop. Neither of these corrections removes the pressure-drop itself. The outlet pressure is still lower

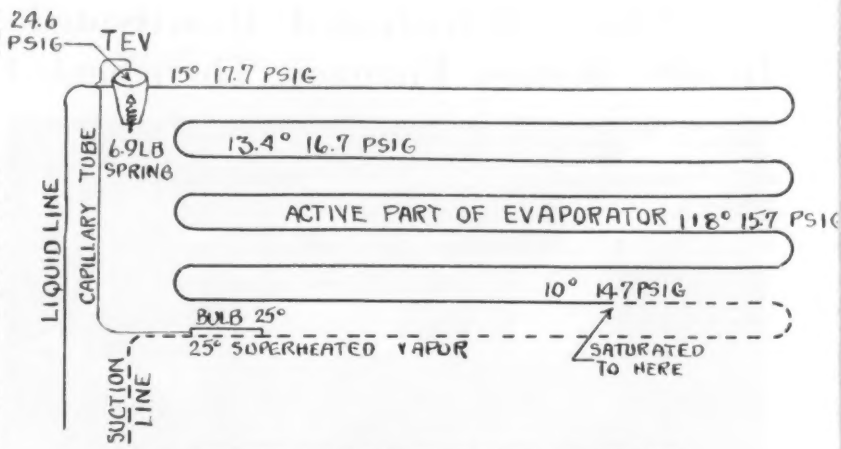


FIG. 2—Evaporator with 3 p.s.i. pressure-drop, 15° superheat.

than normal, and this affects the compressor capacity and efficiency, which will be discussed in the near future.

REFRIGERANT DISTRIBUTORS

In order to obtain equal distribution of the refrigerant from the TEV into the passes of a multiple-pass evaporator (one with rows of tubes in parallel) a refrigerant distributor is used between the TEV outlet and the inlets of the evaporator.

Most of these have a pressure-drop of about 20 p.s.i.

This pressure-drop affects the action of the TEV in the same manner as pressure-drop in the evaporator, and an external equalizer must be used. If the evaporator has negligible pressure-drop, the external equalizer can be connected to the inlet of the evaporator.

As a rule, evaporators do not have negligible pressure-drop, so it is usually better to connect the external equalizer to the evaporator outlet.

Although the pressure-drop through these refrigerant distributors affects the action of the TEV the same as the pressure-drop through the evaporator, it does not affect the capacity and efficiency of the compressor as pressure-drop through the evaporator does.

Pressure-drop through the refrigerant distributor is a portion of the pressure-drop from the liquid line to the evaporator and may therefore be considered as a part of the pressure-drop of the TEV itself as far as the compressor is affected.

Trane Names Watson Service Dept. Mgr.

LA CROSSE, Wis.—Harry J. Watson, 34, has been promoted to manager of The Trane Co. service department, according to Vice President A. C. Menke.

The firm's service department works directly with sales engineers and air conditioning and heating service engineers throughout the United States. As manager, Watson will provide close liaison for the Trane service network of 36 agencies and will play an important part in the firm's service literature and service parts programs.

Watson, a 1952 mechanical engineering graduate of Wisconsin, joined Trane in early 1956 as assistant service manager, it was explained.

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Declares Dividend

NEW YORK CITY — Dividends on both the common and preferred stock of Carrier Corp. were declared recently by the board of directors.

The board approved payments of 60 cents per share on common stock, 56¼ cents on cumulative preferred stock, 4½% series, and 60 cents per share on cumulative second preferred stock, 4½% series.

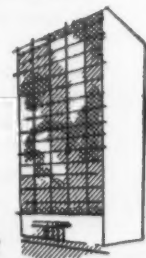
All dividends are payable on Nov. 30 to holders of record at the close of business Nov. 15.

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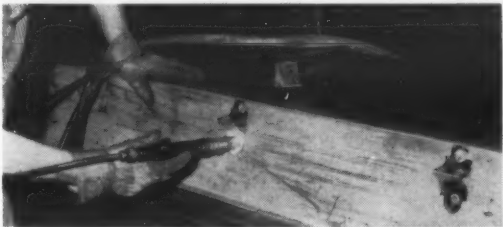
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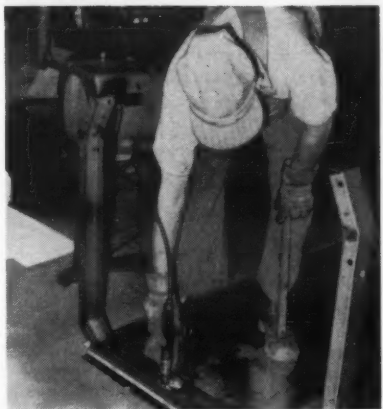
5955 N. ROCKWELL ST., CHICAGO 45, ILL.

Choice exclusive territories are still available





LEFT: An operator fastens a bracket to the side of a refrigerator frame at Koch Refrigerators, Inc.



RIGHT: Employing a Linde SWM-6 "Sigma" spot welding machine with an HW-11 torch, an operator welds a support to a Koch refrigerator frame.

Each Day

Spot Welding Permits One Man To Produce 12 Refrigerator Frames

KANSAS CITY, Kan.—Using Sigma spot welding, one man can produce 12 refrigerator frames a day where two men were required to produce only seven frames a day when screw fasteners were used, reports Koch Refrigerators, Inc. here.

New Method Is One-Step Operation

Formerly the method required punched holes, insertion of the metal screws, then vapor sealing of the protruding screws; the new method requires only spot welding—a one-step operation which results in a more rigid refrigerator frame than before, says the company.

Shells are formed from stainless steel sheets which are lap spot-welded to galvanized steel sheets by means of a Linde SWM-6 Sigma spot welding machine with an HW-11 torch. Steel sheets used are of 14, 16, 18, and 20-gauge thicknesses. The Sigma spot welds can be made from any position and require access to the joint on one side only.

Sigma spot welding makes an inexpensive job out of an especially costly one—assembly parts of a frame in which the weld has to go through 16-gauge black iron, 20-gauge galvanized steel, and 16-gauge creosote-coated channel iron.

Uses Coiled Wire

To produce corrosive-resistant spot welds at a cost of a fraction of a cent per weld, Koch uses Oxweld No. 63 coiled wire, 1/16-in. diameter. The operation is argon-shielded, at a flow of 25 cu. ft. per hour, to prevent atmospheric contamination of the weld zone. Normal welding time is less than one second per weld.

Controls Co. To Build New Indiana Plant

SCHILLER PARK, Ill.—Controls Co. of America announced plans for the building of a 50,000-sq. ft. light manufacturing plant at North Manchester, Ind., to house operations transferred from its present Spring Valley, Ill. facilities.

MANUFACTURERS' REPRESENTATIVES

As an industry service, the NEWS maintains a file of manufacturers' representatives—serving the air conditioning, refrigeration, heating, and allied fields. Territories cover all sections of the United States and some foreign countries.

If you are a manufacturers' representative, who wants to change or add to your line, we urge you to take advantage of our special service. If you are already listed with the NEWS, and want to bring your listing up-to-date, you also should send us the following information today (Please use your letterhead):

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AIR CONDITIONING & REFRIGERATION NEWS
Box RP-A, 450 West Fort Street
Detroit 26, Michigan

Auto Cooling Installations 'Surprise' Car Makers--

(Concluded from Page 1, Col. 2)

ing model year is expected "to be about the same," although the firm pointed out its past history has shown a steady increase in use of auto air conditioning.

Pontiac Div., GMC—About 12,360 air conditioners were installed in Pontiacs in the most-recent model year, the firm reported. This was 3.7% of the 334,041 cars produced. Although this figure indicates a dip from the estimated 15,000 installed in 1956, it is now believed the latter figure was a little high. Pontiac expects to hold its own in factory-installed auto air conditioners during the coming year with a percentage about the same as last.

Chevrolet Div., GMC—Reporting that there were 1,552,748 cars built in the '57 model year, Chevrolet said 17,377 of them had air conditioners factory-installed. Amounting to 1.1% of the total, this was approximately equal to the 17,000 estimated as being installed in 1956. The figure seems to be rising—albeit slowly—and Chevrolet expects to at least "hold its own" in auto air conditioner installations during '58.

Lincoln-Mercury Div., Ford Motor Co.—There were only 3,000 first-cabin Continental Mark II's produced in the 1957 model year, but a whopping 62% of them had auto cooling factory-installed, officials said. This would figure to be 1,860 car conditioners.

Lincoln came through with a respectable 22% of its 41,123 cars produced having auto air conditioners factory installed for a total of about 9,047. This topped the number of units installed in both Lincolns and Mercurys in 1956.

An overwhelming advance was reported by Mercury in factory-installation of car coolers. Of the 286,163 Mercurys built in the 1957 model year, 5.3%, or 15,166, had air conditioners put in at the factory.

Combining Mercury and Lincoln figures, the total of 24,213 air conditioners is reached, triple the number installed by both in the 1956 model year. The division expects another good year in 1958.

Edsel Div., FMC—Obviously, the car having been introduced only two months ago, the division has nothing to report at this time. However, it was emphasized that air conditioners will be pushed in '58 and a "good year" is expected for factory installations.

Ford Div., FMC—Of the approximately 1,700,000 Fords produced in the 1957 model year, the division reported 1% had air conditioners installed on the production line. This would be about 17,000 units, a decrease from the estimated 25,000 of the preceding year. The latter figure is questioned, however, and, as Ford puts it, "there is only one way we can go and that is up."

Both "Selectaire" combination heater-air conditioner and "Polaire" underdash units are factory installed. Several plants have added facilities for production line installation and it is believed an increase in auto air conditioning will come in '58.

Chrysler Div., Chrysler Corp.—10,464 auto air conditioners were installed in Imperials dur-

ing the latest model run. This was 29.8% of the 35,116 produced. Along with that, there were 8,965 units put into Chryslers during the period, or 8.7% of the 103,052 autos made of that name.

Combined, the two figures reach 19,429 air conditioning units installed during the year, an overwhelming surge of nearly three times as many as in the preceding year. And '58 is expected to match or surpass that total.

DeSoto Div., C.C.—Of the 122,040 DeSoto's which came off the line in the '57 model year, 6,102, or 5%, had air conditioners factory installed. This was a sharp jump over the estimated 2,700 installed during the preceding year.

Dodge Div., C.C.—Quite a leap was reported by this Chrysler division in auto air conditioner sales for the 1957 model year. With 3% of the 289,141 autos produced having cooling installed—or about 8,674—a substantial gain was indicated over the 1,500 estimated sold during the preceding model year. It is believed Dodge is leader among lower-priced cars in installation of air conditioning.

Plymouth Div., C.C.—It was reported that 10,415 air conditioners were put into '57 model Plymouths which amounted to 1.6% of the cars produced. If the 1956 figure of 1,000 estimated units installed can be taken as correct, Plymouth has scored a terrific 1,000% sales gain in auto air conditioners!

American Motors Corp.—Total production for the 1957 model year for all AMC cars reached 99,137. Of these, 6,301, or 6.4%, had air conditioning installed at the factory. AMC put cooling units into 14.4% of its "senior" cars—Nash (Hudson)—while 8.9% of Rambler 8's and 6.43%

of Rambler 6's had air conditioning.

Novi Equipment Co.—Although small, this suburban Detroit auto air conditioner manufacturer is well known in the field. Trouble on the production line during part of the year caused Novi to fall slightly short of its anticipated 8,000-unit goal for 1957. However, the firm expects to have a good sales year in 1958. Everything being equal, it indicated, the company would have surpassed '56 sales totals this year.

It would seem from these figures that air conditioning installations on auto production lines during the 1957 model year drove upward over the preceding year by a considerable margin. Present figures total 216,634 auto air conditioners installed in '57 as compared with an estimated 192,000 in '56. Two manufacturers couldn't report their totals in time to meet the News deadline—one, at least, of which is a top ranking air conditioner installer—so the number can't help but be at least 25,000 higher than a year ago.

Auto air conditioning not only seems to have gained a foothold in the car market, but manufacturers eyes sparkle over its future. Auto production fell off somewhat this year, but cooling unit production climbed. A pleasant sign to look at.

M-H To Make Plastics

MINNEAPOLIS — Minneapolis-Honeywell Regulator Co. has entered the field of plastics production.

The company has begun full-scale production of epoxy casting and potting compounds designed especially for use in the electronics industry, according to James H. Binger, vice president. Manufacturing operations are centered here.

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Mill Provides Uninterrupted 9,000-Ft. Copper Tube Flow



THIS 400-ft. multiple drawbench in the new Chase Brass & Copper tube mill in Cleveland draws 210-ft. long straight copper tube with an outside diameter of from 3/4 to 2 in. from an original length of 43 ft.

CLEVELAND — A new copper tube mill, said to be the largest in the country, is now in operation at the Cleveland plant of Chase Brass & Copper Co., a subsidiary of Kennecott Copper Corp.

Housed in a 234,000-sq. ft. addition to Chase's Babbitt Road plant, the new tube mill "provides for the first time uninterrupted production of copper tube, from billet to finished tube, on electronically-controlled, high-speed machines," states G. B. Moseley, vice president for sales. Continuous production of copper tube up to 9,000 ft. in length at "record-breaking speed" is reported by the company.

Multiple Drawbench

Draws 5 Tubes at Once

A new multiple drawbench, said to be the world's longest, can draw five tubes simultaneously, from an initial length of 43 ft. to straight lengths up to 210 ft. The tube is redrawn to sizes of 3/4 to 2 in. at rates from 110 to 330 f.p.m., depending on tube size.

Some of the 210-ft. tubes from the large drawbench are sent to a new set of "circular inverted drawing blocks" where they are drawn into coils of smaller-diameter tube at speeds from 150 to 2,000 f.p.m. The resulting coils, from 60 to 65 in. in diameter, contain from 500 to 3,000 ft. of tube, depending on final diameter of the tube and the coil.

Redraws Coiled Tube to a 'Very Small Diameter'

A "double-deck vertical tube drawblock" redraws coiled tube to a very small diameter. Starting with tubes of about 1/4 in. the vertical drawblock will convert the tube to capillary sizes as low as .070 in. According to Chase, a billet, which is slightly more than 4 ft. long can eventually end up as 9,000 ft. of



THIS device in the new Chase tube mill detects internal and external defects and automatically ejects faulty tube with defective area marked.

tube with an outside diameter of .093 in. and a wall thickness of .025 in. While producing coils 12 to 26 in. in diameter, this drawblock operates at from 430 to 1,290 f.p.m.

A unique electronic defect detector performs "a more critical tube inspection than is possible by any other known method," according to Chase. Internal and external defects are noted, marked, and the faulty tube ejected. The detector is mounted as part of the automatic drawbench and automatic cutting to length and coiling machine.

Degreases Bundles of Long-Length Tube

Whole bundles of long-length tube, up to 30 ft. can be degreased in a giant vapor degreaser which holds 5,000 gals. of trichlorethylene, which is continually distilled at the rate of 300 g.p.h.

All of this equipment and many more new machines are housed in a completely windowless building which is ventilated and heated mechanically. This is instrumental in keeping the material and machinery clean, reports Chase.



NEW corrugated board container eases assembly line packaging and nationwide warehousing of Trane Co. self-contained air conditioners for commercial and public buildings.

Packaged Units Stacked 3-High In New Container

LA CROSSE, Wis.—A new shipping container designed for its 3, 5, and 7 1/2-ton self-contained air conditioners allows the packaged units to be stacked three high in the warehouse, reports the Trane Co. here.

The containers, made of corrugated board with a base of corrugated board and lumber, replaces a plywood container. The new package facilitates lift truck handling. A special wax coating on the interior of the corner posts protects the finish of the units from scratches and scuffs in transit, the company stated.

A red and blue slogan—"A Package of Comfort, Trane Air Conditioner"—appears on each package. The new containers are said to have passed the tests of the National Safe Transit Association.

Add Plant Space

DETROIT — Trade-Wind Motorfans, Inc., manufacturer of kitchen and bathroom ventilators, recently moved into its new air conditioned \$225,000 plant addition at Rivera, Calif., the firm's second major addition in the last three years, it has been learned.

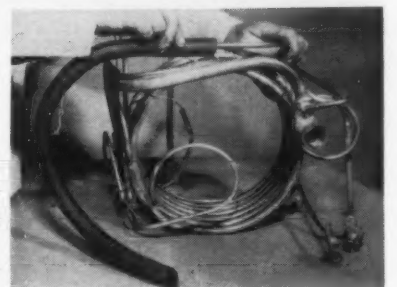
In addition, Container Stamping Corp. broke ground for a new air conditioned factory building in Herrin, Ill. To be completed in early 1958, this latest 20,000-sq. ft. addition will make a total of 100,000 in use then, the manufacturer indicated.

Trade-Wind will produce its entire line of home ventilators, range hoods, wall heaters, and commercial and industrial units in its new facilities.

Water Coolers

Closed Cellular Rubber Tube Bars Condensation, Puddles

BEDFORD, Va. — Repeated customer complaints of wet floors under its water coolers have been eliminated, reports the Uniflow Mfg. Co., Erie, Pa., producer of a line of water-cooling equipment, through the use of closed cellular rubber tubing supplied by Rubatex Div. of Great American Industries, Inc.



CLOSED cellular tubing by Rubatex being installed on the "Uniflow" cold water line.

Condensation Chronic

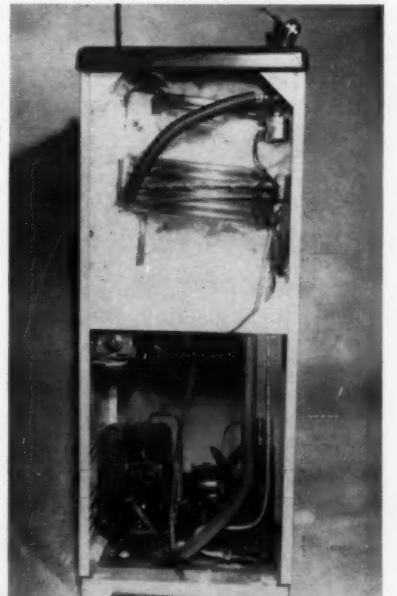
According to Uniflow, condensation and resultant puddles of water were chronic under the coolers' cold water and refrigeration lines, even when such materials as open-celled sponge rubber were used.

The Rubatex type of rubber tubing is actually made up of millions of sealed, balloon-like cells filled with nitrogen. The cells make the tubing impervious to water or vapor, Rubatex officials state.

Tubing Used on Cold Water Lines

The new rubber tubing is used on 12-in. cold water lines where the line passes close to the outside skin of the fountain after refrigeration. It is also applied to the 20-in. refrigeration line.

Originally produced by molding, the tubing is now extruded, thus substantially reducing the cost.



INTERIOR of Uniflow fountain showing cold water line, refrigeration line, and other parts.

Redesigns Fastenings, Connections To Create More Solid Equipment Crating



CRATED air conditioning unit heads down slipping ramp at Lennox Industries' Marshalltown plant. Impact will reproduce effect of shock received when railroad car is humped.

MARSHALLTOWN, Iowa — Deliberately abusing crated furnaces and air conditioning equipment has helped them to redesign fastenings and connections to create more solid construction, states Lennox Industries, Inc. The improved construction results in a lower per cent of installation damage problems for the dealer and in extra durability for the homeowner of the units.

Crated units, ready for shipping, are subjected to two extremely rugged tests, the company reports.

One of the testing devices is a ramp on which the crated

equipment is mounted and then allowed to run downhill. The equipment and the platform on which it rides comes to a sudden jarring stop at the bottom of the slope to simulate very closely the shock that equipment receives when a railroad car is humped. Attached instruments register severity of shock.

The second testing device reproduces the jolting received by equipment shipped cross country in a semi-trailer truck or a freight car.

The tests qualify the equipment for acceptance by the National Safe Transit Association.

Midland Steel To Merge with Ross Engineering If Stockholders OK

CLEVELAND—Midland Steel Products Co. and J. O. Ross Engineering Corp., after approval of both boards, have asked shareholders of each to ratify a merger agreement at special meetings late this month.

If ratified, the combined firm will be known as Midland-Ross Corp., with headquarters here, operating Cleveland, Detroit, and Owosso, Mich. divisions and

the J. O. Ross Engineering division in New York City.

Midland is a major producer of frames, power brakes, and air compressors. Ross, together with its subsidiaries, engineers, designs, and makes atmosphere-control systems for paper and textile mills, rubber companies, and other major industries. It supplies complete finishing and painting systems.

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PATENTS

Week of September 17
(Continued)

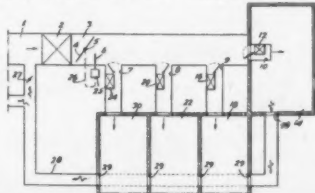
2,806,675. **APPARATUS FOR AIR CONDITIONING.** Henrik Conradi, Appelpiken, Sweden, assignor to AB Svenska Plakfabriken, Stockholm, Sweden.

An air conditioning system for a plurality of independent rooms comprising a common source of pre-conditioned air for said rooms, a duct leading from said source and having independent inlets extending therefrom to each of said rooms, partition means in each of said inlets dividing the inlet into two passages, one of which being provided with a heating means for said pre-conditioned air and the other being free, and means controlling the flow of the supplied air through said passages, said control

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

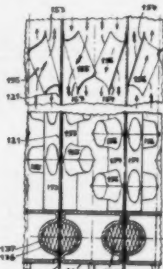
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

means consisting of a damper pivoted at said partition means and having its free end provided with means in a first position of the damper blocking



flow of air through said heating passage and affording full flow through said free passage, a second position blocking flow of air through said heating passage and limiting flow through said free passage. . . .

2,806,676. **HEAT TRANSFER APPARATUS.** Meyer Frenkel, London, England.



1. In heat transfer apparatus comprising a conduit, an inlet for said conduit, an outlet for said conduit, a heat transferring wall extending between said inlet and said outlet and forming, at least in part, the said conduit; a guide-vane in said conduit between the said inlet and the said outlet, which guide-vane extends from substantially the entire width of the said heat transferring wall into said conduit and away from said inlet, and which ends remote from said heat transferring wall with an edge facing away from said inlet; a plurality of guide-nozzles set onto and leading through the said guide-vane, the said nozzles being laterally adjacent the said guide-vane and respectively beginning with an edge substantially facing towards the said inlet. . . .

(To Be Continued)

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This advertisement is directed to sales representatives who are truly worthy of the name, SALESMAN. If you consider that title an honorable one then you are the man we are looking for. The new Ace Cabinet Corporation has a few desirable territories still open. You can obtain complete details in person at our booth at the Refrigeration Show, November 18 to 21, in Chicago. At that time you will see the most complete line of Automatic Defrost Open Top Display Cases, Counter-top Angle Vision Frozen Food and Ice Cream Cabinets, Milk and Beverage Display Cases, Wall Cases, Reserve Storage Freezers. For complete information on the Ace Cabinet Corporation line that will set the pace for '58 visit our booth at the show, and ask to see Ed Stern, President.



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Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The Novi unit is the ninth make to be discussed in the current series on automobile air conditioners. Makes previously described in this series were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, Mark IV, Airtemp, and Mobilette. Other makes by "independent" manufacturers will be described in future instalments, following which units of most automobile manufacturers themselves will be described.

Models discussed in the current series are 1956 and/or 1957. For data on earlier models readers are referred to the original series of articles, which is available now in the handy manual, *Servicing Automobile Air Conditioners*.

NOVI (3)

Novi Sales & Service Co., Inc.
Novi, Mich.

Trouble Chart

Service difficulties on Novi air conditioners generally fall into one or more of the following complaints:

1. The conditioner isn't cooling.
2. The engine is overheating.
3. There is a noise that doesn't sound right.

Recommended procedure in diagnosing these complaints is as follows:

The conditioner isn't cooling.

1. With engine running at low idle, check to see if compressor is operating. Compressor could be inoperative due to a broken or loose drive belt, or if a magnetic clutch is employed, due to a faulty clutch or inoperative clutch resulting from broken wires, poor connection, or blown fuse.

2. If compressor is working, check control cable to modulating valve. If cable is disconnected, replace.

3. If compressor operates and modulating valve cable is okay, check blower motor operation in each speed setting. Five possible complaints are:

- a. Blown fuse.
- b. Switch burned out in any or all positions.
- c. Cut or broken wire.
- d. Motor burned out in any or all speeds.
- e. Faulty connections of wiring.

4. Check air filter, cleaning or replacing if dirty.

5. With evaporator temperature control full out and blowers on high speed, check sight glass. Bubbles indicate shortage of refrigerant.

6. If refrigerant shortage is indicated, check entire system for leaks, repair, and recharge.

7. If refrigerant charge appears okay, check condenser and receiver temperature. Condenser should feel hot at top, warm at bottom. Receiver should feel uniformly warm. A cool condenser or a receiver cool on the lower portion indicates a restriction, Novi says.

8. Attach gauges and run engine at fast idle with temperature control knob full out and blowers shut off. Suction pressure should drop until it reaches modulating by-pass valve setting (18 to 20 p.s.i.g. at 125 p.s.i.g. head pressure). If suction pressure does not drop, compressor, modulating valve, or expansion valve may be at fault.

9. If suction pressure has dropped correctly, expansion valve should feel cold. If valve is not cold, it should be checked

for proper operation.

10. Due to moisture in system, ice may be forming in expansion valve.

Engine overheating.

Excessive stop and go driving or prolonged idling can cause overheating on any make and model, according to Novi. The following items should be checked otherwise:

1. Condenser and radiator must be free of bugs and leaves.
2. Special "air conditioning radiator fan" should be installed.
3. Exhaust heat valve must be free to open.

4. Water in radiator should be clean, free of rust, with no alcohol present. (Permanent-type antifreeze may be safely left in radiator.)

5. When available, as for 1956 Ford and 1957 Lincoln and Mercury, radiator hood baffles should be installed.

It would be well at this stage, Novi suggests, to check car on road with compressor disconnected. If overheating persists, then fault lies in engine cooling system, which should be corrected.

If engine cooling is normal when compressor is disconnected, the following will help reduce overheating or boiling:

1. Install 13 p.s.i.g. radiator cap (except on honeycomb style radiators).
2. Remove water thermostat.
3. Be sure engine is properly timed.
4. If compressor pressures

are excessive, remove some of refrigerant.

5. If head pressure is 20 p.s.i.g. or more over normal pressure for the temperature involved after engine has stopped and cooled to room temperature, air is in system.

6. If possible, relocate condenser farther away from radiator and move cooling fan closer to radiator.

7. Install extra cooling radiator if available.

Unusual noise.

1. Belt slap can occur at certain speeds which are at the natural vibration point of the belt. A loose belt, however, aggravates this condition.

2. A worn or loose bearing will cause excessive pulley noise.

3. A "bird chirp" noise may be heard if water level in evaporator drain pan builds up. Check drain outlet.

4. Hissing may occur at expansion valve when refrigerant charge is low.

5. Compressor may knock if oil level is low.

6. A drumming sound may be conveyed from engine compartment into passenger compartment by the modulating valve control cable.

Adjusting By-Pass Valve

The modulating by-pass valve is set at the factory to maintain a minimum suction pressure of 18 to 20 p.s.i.g., which will prevent icing of the evaporator in most parts of the country, according to Novi.

Adjustment of this setting can be made in the field to raise the evaporator temperature or lower it.

In areas where the weather is extremely dry, customers may desire lower coil temperatures.

After lock nut on bellows end of the valve has been loosened, the adjusting fitting is turned clockwise to raise the pressure setting or counter-clockwise to lower the setting. The lock nut is tightened afterwards.

1. Install 13 p.s.i.g. radiator cap (except on honeycomb style radiators).
2. Remove water thermostat.
3. Be sure engine is properly timed.
4. If compressor pressures

(Next instalment will begin the discussion of the Vornado auto air conditioner.)

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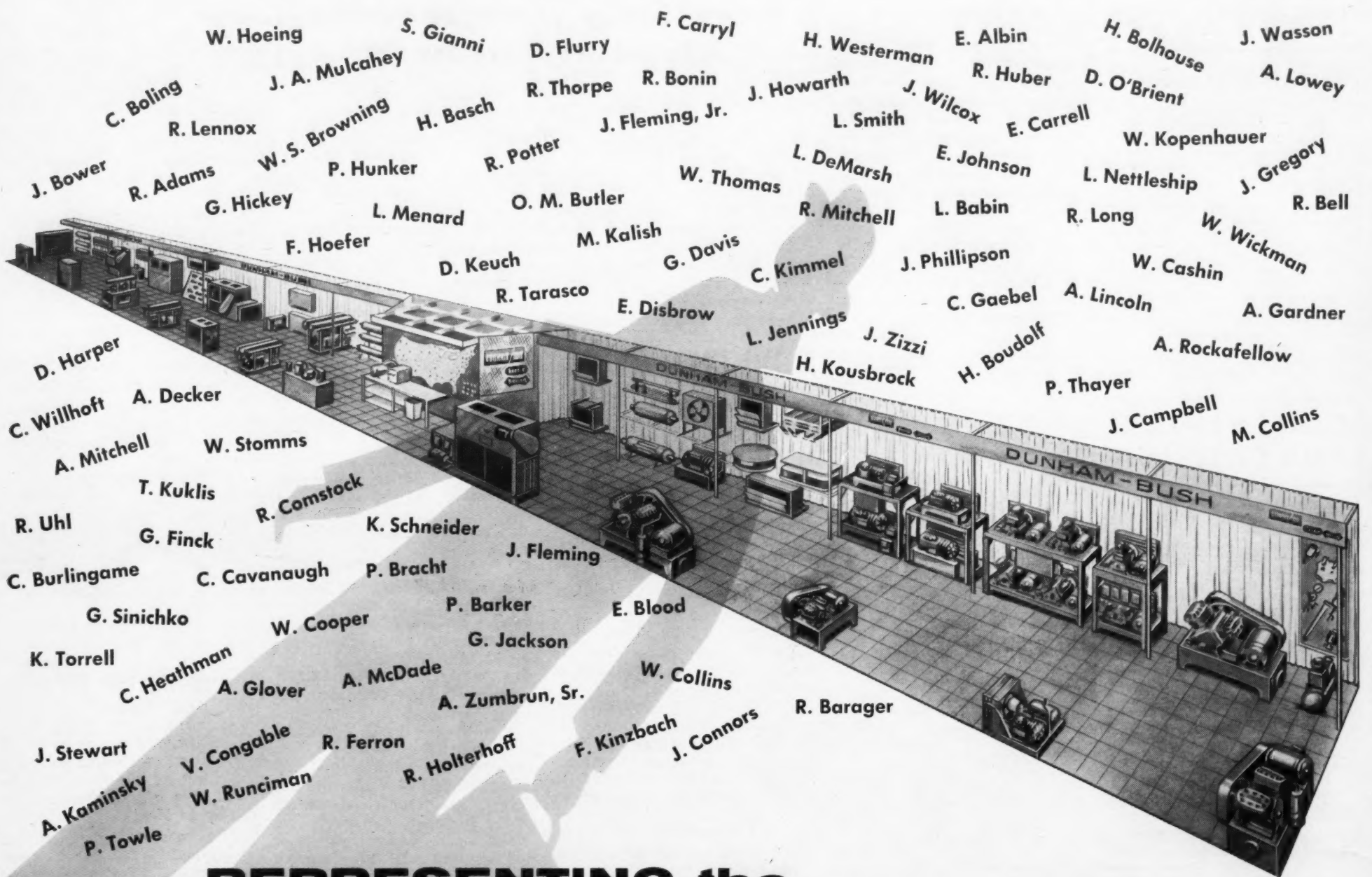
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